

Numismatic notes & monographs.

New York : American Numismatic Society, 1920-

<http://hdl.handle.net/2027/mdp.39015009096846>

HathiTrust



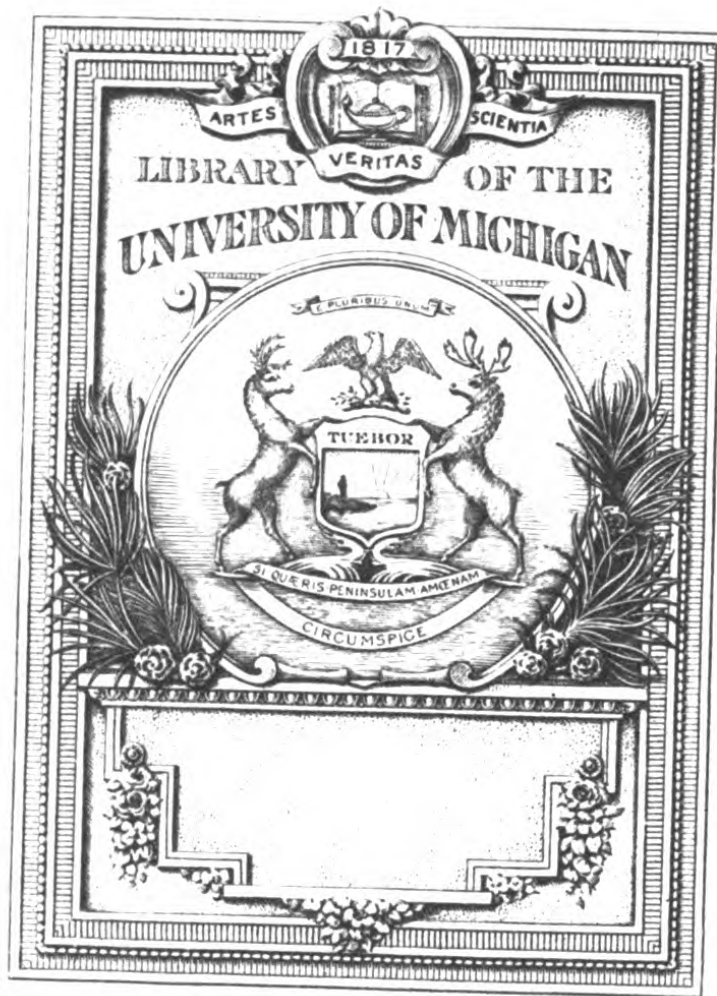
www.hathitrust.org

Creative Commons Attribution-NonCommercial-ShareAlike

http://www.hathitrust.org/access_use#cc-by-nc-sa-4.0

This work is protected by copyright law (which includes certain exceptions to the rights of the copyright holder that users may make, such as fair use where applicable under U.S. law), but made available under a Creative Commons Attribution-NonCommercial-ShareAlike license. You must attribute this work in the manner specified by the author or licensor (but not in any way that suggests that they endorse you or your use of the work). This work may be copied, distributed, displayed, and performed - and derivative works based upon it - but for non-commercial purposes only (if you are unsure where a use is non-commercial, contact the rights holder for clarification). If you alter, transform, or build upon this work, you may distribute the resulting work only under the same or similar license to this one. Please check the terms of the specific Creative Commons license as indicated at the item level. For details, see the full license deed at <http://creativecommons.org/licenses/by-nc-sa/4.0>.

A 969,819



36

1
-
7

APR 7 1941

NUMISMATIC NOTES AND MONOGRAPHS

No. 88



A PUERTO RICAN COUNTER- STAMP

BY
JAIME GONZALEZ

THE AMERICAN NUMISMATIC SOCIETY
BROADWAY AT 156TH STREET
NEW YORK
1940

PUBLICATIONS

The American Journal of Numismatics, 1866-1920.

Monthly, May, 1866-April, 1870.

Quarterly, July, 1870-October, 1912.

Annually, 1913-1920.

With many plates, illustrations, maps and tables. Less than a half-dozen complete sets of the Journal remain on hand. Price on application.

The numbers necessary to complete broken sets may in most cases be obtained. An index to the first fifty volumes has been issued as part of Volume LI. It may be purchased separately for \$3.00.

The American Numismatic Society. Catalogue of the International Exhibition of Contemporary Medals. March 1910. New and revised edition. New York. 1911. xxxvi, 412 pages, 512 illustrations. \$3.00.

Numismatic Notes and Monographs

9. David Eugene Smith, LL.D. Computing Jetons. 1921. 70 pp. 25 pls. \$1.50.
10. Edward T. Newell. The First Seleucid Coinage at Tyre. 1921. 40 pp. 8 pls. \$1.00.
12. Howland Wood. Gold Dollars of 1858. 1922. 7 pp. 2 pls. 50c.
13. R. B. Whitehead. Pre Mohammedan Coinage of N. W. India. 1922. 56 pp. 15 pls. \$2.00.
14. George F. Hill. Attambelos I of Characene. 1922. 12 pp. 3 pls. \$1.00.
15. M. P. Vlasto. Taras Oikistes (A Contribution to Tarentine Numismatics). 1922. 234 pp. 13 pls. \$3.50.
17. Agnes Baldwin. Six Roman Bronze Medallions. 1923. 39 pp. 6 pls. \$1.50.
18. Howland Wood. Tegucigalpa Coinage of 1823. 1923. 16 pp. 2 pls. 50c.
19. Edward T. Newell. Alexander Hoards—II. Demanhur Hoard. 1923. 162 pp. 8 pls. \$2.50.
20. Harrold E. Gillingham. Italian Orders of Chivalry and Medals of Honour. 146 pp. 34 pls. \$2.00.
21. Edward T. Newell. Alexander Hoards—III. Andritsaena. 1924. 39 pp. 6 pls. \$1.00.
22. C. T. Seltman. A Hoard from Side. 1924. 20 pp. 3 pls. \$1.00.

N U M I S M A T I C
NOTES AND MONOGRAPHS

NUMBER 88

NUMISMATIC NOTES AND MONOGRAPHS
is devoted to essays and treatises on subjects relating to coins, paper money, medals and decorations and is uniform with Hispanic Notes and Monographs published by the Hispanic Society of America, and with Indian Notes and Monographs issued by the Museum of the American Indian—Heye Foundation.

PUBLICATION COMMITTEE

AGNES BALDWIN BRETT, *Chairman*

STEPHEN H. P. PELL

THOMAS O. MABBOTT

EDITORIAL STAFF

SYDNEY PHILIP NOE, *Editor*

SAWYER MCA. MOSSER, *Associate Editor*

A PUERTO RICAN COUNTER- STAMP

BY
JAIME GONZALEZ



4 0 0 0 0
5 7 5 0

THE AMERICAN NUMISMATIC SOCIETY
BROADWAY AT 156TH STREET
NEW YORK
1940

TO RICAN COUNTER- p

**COPYRIGHT 1940 BY
THE AMERICAN NUMISMATIC SOCIETY**



**THE INTELLIGENCER PRINTING CO.
LANCASTER, PA.**

*Special
Note*

EDITORIAL NOTE

As long ago as 1934, Mr. Howland Wood received, through the kindness of Mr. Gonzalez, transcriptions of the documents which follow, and which either are quoted in full or summarized here.

The importance of this material for anyone interested in the counterstamped pieces of the West Indies was at once apparent. In August of 1935 we had the pleasure of welcoming Mr. Gonzalez at our museum and on his return to Puerto Rico he sent translations of three of the most important of these documents. For some reason, the material was never prepared for publication by Mr. Wood and on his death the papers were turned over to the Publication Committee. That Committee decided to reprint these documents, even though we were unable to add to the counterstamped pieces in the Society's cabinet illustrating the practice described. It is felt that what follows sufficiently illustrates the carrying out of these instructions to explain how coins with the fleur-de-lis counterstamp came into existence, how they were withdrawn, and why they are so infrequently met with today, even in Puerto Rico.

Since almost all of this information has been supplied by Mr. Gonzalez it is fitting that the monograph should appear under his name. Any errors which may have been embodied, however, should not be attributed to him.

THE EDITOR

A PUERTO RICAN COUNTER-STAMP

BY JAIME GONZALEZ

For many years, numismatists have been puzzled by a fleur-de-lis counterstamp which has been found on coins circulating in the West Indies, and especially in Puerto Rico. Most of the pieces bearing this counterstamp are of silver and in a great many instances these silver pieces are holed. The counterstamp does not show marked variation but the pieces to which it is applied cover a fairly considerable period; the pieces known to us bear dates as early as 1800 and as late as 1880. They include issues of the United States, Mexico and South America.

In the *American Journal of Numismatics* for 1914, an article on the coinage of the West Indies was published by the late Howland Wood. A brief section thereof was devoted to counterstamps which had been used in Cuba and Puerto Rico. Listed among the undetermined counterstamps is the fleur-de-lis with which we are at present concerned. The illustration used was the piece described below as No. 5. Mr. Wood's description was as follows:

"One of the common stamps on silver coins is what is apparently a double-headed fleur-de-lis (shown in illustration). Some have thought this mark to have reference to some French colony. The shape of the fleur-de-lis would almost preclude this."

Mr. Wood's conclusions concerning the significance of the counterstamp were based on the knowledge of the few specimens known to him at the time of

4 A PUERTO RICAN COUNTERSTAMP

writing. As most of these were on pierced or worn coins of the United States, he believed that this stamp must have been in use at one of the United States sub-treasuries to mark as unredeemable coins submitted for redemption. He states, however, that inquiries at official sources brought no confirmation of this suggestion.

Under date of December 16, 1933, I wrote to Mr. Wood, informing him of the decree of the Governor General dated November 27, 1884, which established regulations for the applying of this countermark, and as a result of the correspondence which followed, I later sent him copies of this and succeeding decrees, together with a translation of the more important of them.

Before proceeding to a description of the coins involved, and a discussion of the decrees, it is fitting that we remind ourselves of the status of Puerto Rico: In 1870 the island had been made a province of Spain and given a representation through elective deputies in the Spanish Cortes. This, however, lasted for four years only, and the island then returned to its former status. In 1877 the representation by deputies was re-established. It was not until 1897 that Puerto Rico was given an autonomous government, and this grant did not become operative before the occupation of the island by the United States Army in 1898.

We know that over a long period of years a shortage of small change was characteristic of currency in the West Indies and especially for those islands under a colonial status. The best evidence

A PUERTO RICAN COUNTERSTAMP 5

that this condition existed in Puerto Rico is to be found in the decrees with which we are concerned herein, and the coins counterstamped with the fleur-de-lis. A brief description of the specimens available is in consequence next in order:

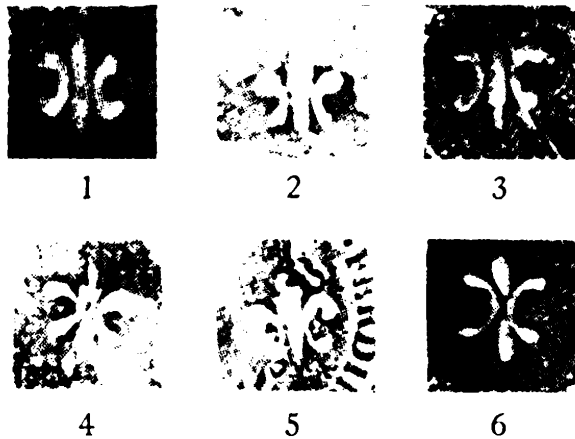
1. United States Dollar of 1800, with a hole obliterating the E of LIBERTY. Counterstamp eliminates profile.
2. United States Quarter of 1857, holed at top; fleur-de-lis slightly below the center.
3. United States Quarter of 1809? The design nearly obliterated, a few letters and two or three of the digits of the date being all that is discernible. In addition to the fleur-de-lis, which is slightly off-center, there are a number of gouges of irregular shape and without any design.
4. Two-real piece struck at Guatemala in 1817, showing the head of Ferdinand VII; pierced at top; counterstamped with fleur-de-lis.
5. Two-real piece of Peru for 1826, counterstamped on obverse; worn smooth but not pierced.
6. Copper quarter real piece of the Dominican Republic for 1844.

These coins are all in the cabinet of the American Numismatic Society. They afford representative examples of the use of the fleur-de-lis counterstamp, without being exhaustive. In my own collection, I have a United States dollar for 1880, a trade dollar of 1876, a half-dollar of 1857, and four United States quarters of different dates. All of these were collected in Puerto Rico. Another Puerto Rican collection, that of Mr. Robert L. Junghanns, of Bayamon, contains other counterstamped pieces—a few silver and three or four copper ones. I am also informed by Mr. Robert R. Prann, of San Juan, that he has in

6 A PUERTO RICAN COUNTERSTAMP

his possession a number of pieces stamped with the fleur-de-lis.*

The official documents relating to these pieces are in the form of decrees issued by the Governor



General for the Island, and give instructions to one and (by implication) to all officials in charge of the custom houses. These were seven in number, as follows: Fajardo, Guayama, Ponce, Mayaguez, Arecibo, Vieques and San Juan. The first of these decrees, bearing the date November 27, 1884, is also first in importance.

* In a letter of January 8, 1940, Mr. Prann has written: "I am giving you below a list of the coins counterstamped with the fleur-de-lis, in my collection; all of these pieces have been either mutilated or holed and plugged. They are as follows: a United States Trade Dollar for 1876, a United States Dollar for 1880; one United States Half Dollar piece for each of the following years: 1833, 1855, 1856, 1857, 1858, 1859, 1871, 1875, 1876; and 10 pieces with date so mutilated as to be illegible. Three United States Quarter Dollars for 1854, one for 1855, two for 1858, one for 1872, one for 1876, one for 1877; and 18 pieces with date so mutilated as to be illegible. A Spanish four-real piece for 1775, and a French five-franc piece dated *L'an 7*.

GOBIERNO GENERAL
DE LA ISLA DE PUERTO-RICO

DECRETO

En vista de los graves peligros, que entraña para la riqueza de esta Isla, la circulación de monedas de plata agujereadas; usando de las facultades que me ha concedido el Excmo. Sr. Ministro de Ultramar, y de acuerdo con el parecer de la Junta reunida en la tarde de este día, con el que está igualmente conforme la Intendencia general de Hacienda, vengo en decretar lo siguiente:

1° Queda prohibida desde este día la entrada en esta Isla de las monedas de plata agujereadas.

2° Se procederá en el menos plazo posible, á resellar, con una flor de lis, las que actualmente se encuentran en circulación.

3° Las Cajas del Tesoro de esta Isla admitirán y darán en pago dichas monedas agujereadas, interin no se adopte el medio mas conveniente para retirarlas de la circulación.

4° Terminado el plazo que se señale para resellarlas, quedarán fuera de la circulación todas las que carezcan de este requisito.

5° Dada cuenta por la Intendencia á este Gobierno General de quedar ultimada la operación del resello de la citada moneda, se procederá por éste al nombramiento de seis personas, que en representación de la Hacienda pública y del Comercio, presencien la inutilización de los troqueles que hayan servido para verificar dicha operación.

6° La Intendencia General de Hacienda adoptará las disposiciones que exija el cumplimiento de este Decreto.

Puerto-Rico, 27 de Noviembre de 1884.

LUIS DABAN
Gobernador

(De la Gaceta Oficial de Puerto-Rico de 29 de Noviembre de 1884.)

8 A PUERTO RICAN COUNTERSTAMP

GENERAL GOVERNMENT OF THE ISLAND OF PUERTO RICO

In view of the serious dangers to which the circulation of perforated silver coins exposes this Island, I, availing myself of the authority vested in me by His Excellency the Minister of Overseas Possessions, and in accordance with the opinion of the Board assembled on the afternoon of the present date, and seconded by the Department of Finance, do hereby decree as follows:

1.—That from and after this date the entry of perforated silver coins into this Island shall be prohibited.

2.—That perforated coins at present in circulation shall be stamped, as soon as possible, with the fleur-de-lis.

3.—The Treasury offices of this Island shall accept and dispense said perforated coins, restamped, until means may be conveniently adopted to withdraw them from circulation.

4.—Such as are not restamped within the time allotted therefor shall be out of circulation.

5.—Once the General Government has been notified by the authorities that the stamping of said coins has been accomplished, it shall proceed to appoint six persons as representatives of the public Treasury and Commerce Department, to witness the destruction of the dies employed in the performance of said operation.

6.—The General Treasury Department shall adopt such measures as will tend to force compliance with this Decree.

Puerto Rico, November 27, 1884.

LUIS DABAN
Governor

(From the Official Gazette of Puerto Rico, Nov. 29, 1884.)

The first article of this official decree prohibits the importation of perforated coins. The regulation must have been difficult to enforce—how it was to

A PUERTO RICAN COUNTERSTAMP 9

have been accomplished is not specified, but the second article must have had the intention of supporting the first. The provision that the counterstamping should be done "as soon as possible" leaves an element of uncertainty which is cleared up by a later document showing that the operation was to be completed by March 31, 1885. We have here an indication of the ultimate purpose of the counterstamping—the withdrawal of the counterstamped coins from circulation; the interim circulation of pieces which had been counterstamped is given consideration. Unstamped pieces, after a time limit (April 1, 1885) had expired, were no longer to be legal tender. The destruction of the dies bearing the counterstamps is the subject of the final article of the decree.

Of the correspondence relative to the foregoing, the three documents which follow in translation contribute certain facts which have significance:

TREASURY DEPARTMENT

Administrator of Revenues and Customs, Fajardo.

I telegraphed you today as follows:

"Tomorrow's 'Gazette' will publish a circular extending until the end of the month the restamping of perforated coins. Until punch is sent for restamping coins to be exchanged, you will receive and exchange, for whole pesos—pesetas, half-pesos and perforated pesos."

I communicate this to you for your guidance and in confirmation of my telegram quoted above.

God watch over you for many years. Puerto Rico, March 11, 1885.

M. CABEZAS

10 A PUERTO RICAN COUNTERSTAMP

TREASURY DEPARTMENT

Administrator of Revenues and Customs, Fajardo.

We are sending you herewith a punch to enable you to restamp silver perforated coins, of which operations you will keep record so that you can transmit a report to the Treasury Department of the pesetas, half-pesos and pesos which have been restamped.

I urge the greatest care in this undertaking and request that you acknowledge receipt of this order.

God watch over you for many years. Puerto Rico, March 14, 1885.

M. CABEZAS

TREASURY DEPARTMENT

To Custom House Administrators of the Island:

This department desiring to terminate the restamping of perforated silver coins as provided for by the decree of the Governor General dated November 27th last, and utilizing the authority given in the sixth paragraph of that decree, has resolved:

1. The exchange and restamping of pesetas, half-pesos and perforated pesos shall continue to be practiced in the General Treasury Department and in all of the local branches, until the thirty-first day of the present month.

2. In accordance with the provisions contained in the fourth paragraph of the above cited decree of the Governor General—from the first day of the next month of April, all perforated silver coins which have not been restamped shall remain out of circulation.

3. All Local Administrators shall see that this end is attained and will comply with the orders which have been communicated, facilitating the operation as much as possible.

Puerto Rico, March 11, 1885.

M. CABEZAS

The first of the foregoing communications, dated March 11, 1885, provides for the exchange of holed silver pieces for perfect ones until the fleur-de-lis

A PUERTO RICAN COUNTERSTAMP 11

punch is received. The second, dated March 14, 1885, transmits the punch for Fajardo. The third, dated March 11, 1885, provides March 31 of that year as the final date for the counterstamping of holed pieces, and declares perforated pieces not so marked shall no longer circulate lawfully after that date.

Correspondence of the Treasury Department and custom house administrators between April 1 and 15 records the fulfilling of these instructions; a report as to the number of pieces involved is directed and supplied and the return of the punch is arranged. The significant item, dated April 1, 1885, is the report of the official at Fajardo which records the extent of the operation there—a total value of 1359.25 pesos. This report, in translation, alone need concern us here.

REPORT OF THE PERFORATED SILVER COINS WHICH HAVE BEEN RESTAMPED AT FAJARDO

Treasury Department—Capital:

Complying with request contained in your communication of the 15th of the past month, I am detailing below the number and denomination of silver perforated coins which have been restamped up until yesterday.

	<i>Pesos</i>	<i>Cents</i>
99 Pesos (whole)	99	00
1039 Half-pesos	519	50
2963 Pesetas	740	75
Total	1359	25

Fajardo, April 1, 1885.

(Signature illegible)
Administrator

12 A PUERTO RICAN COUNTERSTAMP

As a result of the counterstamping directed in the preceding documents, and recorded as having been carried out, we may conclude that after April 1, 1885, counterstamped pieces of silver, even when holed or worn, were accepted by the authorities and merchants while pieces not counterstamped were not accepted officially and could not be passed as legal tender; in other words, they circulated, if at all, at bullion rather than face value.

The next step, the redemption of the counterstamped silver, is indicated in a decree dated March 17, 1894—ten years after the first one:

GOBIERNO GENERAL
DE LA
ISLA DE PUERTO-RICO

DECRETO

En vista de los continuos quebrantos que vienen sufriendo todas las clases de esta Sociedad con motivo de la circulación de moneda fraccionaria agujereada y resellada; atendiendo á las continuadas y justísimas quejas que elevan diariamente á mi Autoridad las Corporaciones populares en representación de su vecindario, y con la competente autorización del Gobierno Supremo; vengo en disponer, con caracter provisional, lo siguiente:

1° Queda fuera de la circulación legal para pagos al Estado y particulares todas las monedas de medio peso y las pesetas agujereadas, sin distinción de resello, siempre que sean de cuño anterior al año de 1885.

2° Existiendo tambien en circulación, según el expediente, algunos pesos de cuño mexicano y pesetas del español agujereadas y reselladas, se hace presente que se halla comprendida dicha moneda en el artículo anterior.

A PUERTO RICAN COUNTERSTAMP 13

3° Las monedas que no sean presentadas al canje en el plazo improrrogable que se fija, no tendran curso ni valor alguno.

4° Los tenedores de las monedas que quedan expresadas, las presentarán para serles canjeadas con moneda de curso legal en la Tesorería general y en todas las Depositarias de Hacienda de la Isla.

5° Para verificar este canje se concede un plazo de ocho dias á contar del de la publicación de este Decreto, terminando la operación el día 26 inclusive del mes actual.

La Intendencia general de Hacienda de esta Isla queda encargada de su cumplimiento.

San Juan, P. R., Marzo 17 de 1894.

DABAN
Gobernador

(Gaceta Oficial Extraordinaria de 17 de Marzo de 1894.)

GENERAL GOVERNMENT OF THE ISLAND OF PUERTO RICO

DECREE

In view of the losses being sustained by all classes of society due to the circulation of perforated and restamped fractional coins, and in response to the continuous and justified complaints daily presented to my Authority by outstanding groups in representation of their respective communities, I, with the due authority of the Central Government, do provisionally ordain the following:

1.—All perforated half-dollars or quarters, whether restamped or not, coined prior to the year 1885, are declared invalid for payment to the State or individuals.

2.—The foregoing article, moreover, includes certain perforated and restamped dollars of Mexican coinage, and quarters of Spanish coinage, also in circulation.

3.—Coins that are not presented for exchange within the unextendable period set shall be valueless.

4.—Holders of coins such as those mentioned, shall

14 A PUERTO RICAN COUNTERSTAMP

exchange them for legal tender at the Treasury Department, or at the branches thereof in the Island.

5.—Eight days are hereby granted from and after the publication of the present Decree, that is, until the 26th instant, within which to effect this exchange.

The Treasury Department of this Island is entrusted with the enforcement hereof.

San Juan, Puerto Rico, March 17, 1894.

DABAN
Governor

(Official Gazette, Extra Issue, March 17, 1894.)

A period of eight days is set in which *all* perforated half-dollars or quarters, *whether restamped or not*, if coined prior to 1885, and "certain" perforated and restamped dollars of Mexican coinage, and quarters of Spanish coinage, may be exchanged for legal tender.

The collectors of customs must have been grateful for the more specific instructions which are contained in a communication from the Department of the Treasury to them and dated the same day as was the decree:

INTENDENCIA GENERAL DE HACIENDA PUBLICA DE LA PROVINCIA DE PUERTO-RICO

Sr. Administrador de Rentas y Aduana de Arecibo.
Con esta fecha digo á V. por telégrafo lo que sigue:

"Gobierno General autorizado manda recoger toda moneda, pesos, medios pesos y pesetas agujereadas y reselladas sin distinción de resello siempre que sean de fecha anterior á 1885, por haberse decretado prohibición moneda agujereada Noviembre de 1884. Esa

A PUERTO RICAN COUNTERSTAMP 15

Aduana debe canjear por moneda de curso legal toda la que reuniendo requisitos anteriores se le presente en el improrrogable plazo de ocho días, dando diariamente cuenta detallada á esta Yntendencia por telégrafo y correo de la presentada y canjeada. Si le faltaran fondos avisará solicitando los que considere extrictamente necesarios de la Tesorería Central. La moneda recojida y canjeada la remitirá por "movimiento de fondos," en cuanto termine operación, á la Tesorería. Encarezco el mayor celo en este servicio. Si se le presentase moneda y careciere de fondos recójala dando un resguardo hasta que los reciba, pues los fondos se le enviarán inmediatamente. Acuse recibo."

Y lo transcribo á V. para su conocimiento y con el fin de evitar las dudas que pudieran ocurrir.

Dios guarde á V. muchos años. Puerto-Rico, 17 de Marzo de 1894.

BAYONA
Intendente

MAIN OFFICES OF THE PUBLIC TREASURY OF THE PROVINCE OF PUERTO RICO

The Administrator of Revenue and Customs of Arecibo (and presumably the other cities having custom houses):

I am this day informing you by telegraph as follows:

"General Government authorized taking in of all perforated and restamped coins—dollars, half-dollars and quarters, no matter how stamped, provided they bear date prior to 1885, perforated coins having been outlawed November 1884. Your Customs Office should exchange for legal tender all coins complying with requirements above mentioned, within the limit of eight days, and furnish this Office with a detailed telegraphic or postal report of such delivery and exchanges. If you should lack funds, you shall request the exact amount needed of the Treasury Department. The coins collected and exchanged shall be remitted to the Treasury as "reversion of funds" as soon as transaction is effected. I advise the greatest care in this enterprise.

16 A PUERTO RICAN COUNTERSTAMP

If you receive coins while short of funds, accept them in exchange for your receipt until money reaches you. It will be remitted immediately. Acknowledge receipt."

I furnish you the above, for your guidance, and to avert doubts that might arise.

God watch over you for many years. Puerto Rico, March 17, 1894.

BAYONA,
Treasurer

This explicitly provides for the exchange of perforated and restamped dollars, half-dollars and quarters, *no matter how stamped*, provided they bear a date previous to 1885. It will be seen that holed silver pieces not counterstamped, whether struck before or after 1885, were not redeemable. It is also noteworthy that Mexican or South American pesos, as well as Spanish issues, were locally reckoned in terms of the dollar, since we can hardly suppose these instructions to be intended for United States dollars only. Presumably the Treasury Department's instructions would take precedence over the decree, which seems to have permitted exchange of currency pierced but not counter-stamped—a provision in direct opposition to the intent of the whole procedure.

There are on record further communications from the Treasury Department to the customs administrator at Arecibo giving greater explicitness to the instructions as to what might be accepted for exchange, and specifying the nature of the report regarding the transaction required from him when the time limit shall have expired. The summary of the \$15,126.75 involved at Arecibo may have significance, and it is therefore given.

A PUERTO RICAN COUNTERSTAMP 17

A recount of the coins exchanged during this period gave as a result a total of 15,126 pesos, 75 cents, in current money, classified as follows:

American (U. S.) dollars.....	446.00
Mexican half pesos.....	8,127.50
Mexican pesetas.....	6,435.25
Spanish pesetas.....	118.00

The exchange was effected as follows:

	<i>Current Money</i>	
	<i>Pesos</i>	<i>Cents</i>
March 19,	1,245	00
20,	1,502	50
21,	3,133	25
22,	782	00
24,	2,820	75
25,	2,951	75
26,	2,691	50
	<hr/>	<hr/>
Total	15,126	75

Arecibo, March 26, 1894.

(Signed) ANGEL SAM
MANUEL DE CAPETILLO
FRANCISCO LEDESMA
JUAN DE ARESPOCHAGA
JOSE LEON ALVAREZ
LUCIANO MARGANIZ

The reader will perhaps have noted that the counterstamped coins were redeemed in pesos—that is, Spanish issues, theoretically, but in all probability, and with much greater likelihood, Mexican issues. That this conclusion is warranted is borne out by the facts of the recoinage act of 1895, which did provide for Puerto Rico a local coinage. The royal decree published December 6 provides for the replacement of the Mexican silver pesos in circulation. The statement in the London Mint Report gives certain facts which are of interest:

18 A PUERTO RICAN COUNTERSTAMP

A change in the currency system at Puerto Rico in consequence of the withdrawal of Mexican dollars necessitated a considerable coinage at the Madrid Mint on account of that Colony, of which the following are the particulars:

<i>Denomination</i>	<i>Pieces</i>	<i>Value</i>	
		<i>Pesetas</i>	<i>£</i>
Peso of five pesetas	8,500,021	42,500,105	1,700,004
Pesetas of 20 centavos	967,364	967,364	38,695
	<hr/>	<hr/>	<hr/>
	9,467,385	43,467,469	£1,738,699

The Mexican dollars and other foreign coins withdrawn in Puerto Rico amounted to \$6,103,922. Under the Royal Decree published on the 6th December, 1895, these coins were to be melted down for recoinage, Mexican dollars being called in at 95 per cent of their nominal value, or 95 cents of the new coinage being given for each Mexican dollar. The new Spanish dollar will correspond exactly to the five-peseta piece. Spanish gold coin, and gold coin circulating in Spanish dominions, are to be legal tender in Puerto Rico, with a premium of 20 per cent over their nominal value.*

The 1896 Mint Report of the United States also refers to this new coinage and quotes a letter from the United States Consul at San Juan, which gives the observations of a spectator. This, too, merits reproduction:

“Consulate of the United States,
San Juan de Puerto Rico, December 10, 1895.

SIR:

I have the honor to inclose herewith an ‘extraordinary’ copy of the Official Gazette of Puerto Rico, together with a translation of the same, in reference to the long mooted exchange of the Mexican silver money

* Twenty-sixth Annual Report of the Deputy Master of the Mint, 1895. London, 1896. p. 37.

A PUERTO RICAN COUNTERSTAMP 19

now current in this island for a new money. The details of the plan of exchange have been kept secret up to the time of this publication, on the 8th of December.

The new money is provincial in its character, but it is in all other respects the same as the coin now circulating in Spain, except that it is coined for Puerto Rico and will not be taken in circulation, at least for the present, in Spain or her dominions.

It is only contemplated by this decree at present to refund the whole dollar—Mexican—and not the fractional Mexican money. This latter money, together with whatever foreign fractional money there is in circulation, will probably be supplanted as soon as enough Mexican dollars are withdrawn from circulation to furnish material for the coinage of the new fractional pieces. These pieces are to be of the same fineness and denomination as those now circulating in Spain, only as above excepted.

The bulk of the 5 and 10 cent pieces in circulation are United States coin of these denominations, badly mutilated; therefore, it may be interesting to learn what has become of a certain amount—an amount not easily estimated—of bad United States coin.

There is a considerable seigniorage resulting from the recoinage of the Mexican money into the new coin, and it is provided, after paying all the expenses attendant upon the exchange, that the residue of this seigniorage shall be converted into gold coin, and placed in circulation at the stated premium of 20 per cent. That it will remain in circulation is hardly to be considered. In fact, the whole reference to gold in the articles of the decree is rather spectacular, unless a covert meaning is attached, which has been rumored, viz., that a certain proportion of all dues, customs and otherwise, to the Government will have to be paid in gold and taken by the Government at this nominal rate of 20 per cent premium. This, however, is conjecture. But if it is carried out and put into execution it will occasion great hardship, as the gold will demand a much higher premium.

It is rather early as yet to predict what effects this new money will have upon the country. Intrinsically it is not worth as much as the Mexican money, and it is absolutely unsupported. That in the course of time it

20 A PUERTO RICAN COUNTERSTAMP

must find its level goes without saying. At present the new money is received with favor by the people, and exchange is weak. The ruling rate on New York is now in the neighborhood of 58 per cent. . . .

John D. Hall,
United States Consul

Hon. Edwin F. Uhl,
Assistant Secretary of State,
Washington, D. C."*

It is hardly possible that the Puerto Ricans were unaware of the very heavy seigniorage† involved in the acceptance of the new coins, and one wonders whether the populace was over-prompt in turning in Mexican dollars at a discount of five per cent, and with a further loss due to the lower silver content of the new coins.

Very likely experienced numismatists will have noted the lack of any provision for the counterstamping or redemption of the copper coins such as the one in the American Numismatic Society's collection and others in private collections. It is probable that the counterstamping of copper was due to 'excessive zeal' on the part of one or more of the customs administrators, or to misunderstanding of their instructions. There is on record a decree of the Governor, dated March 14, 1896, providing for the acceptance of pierced bronze coins. This piercing of bronze seems to have been done for the purpose of

* Twenty-fourth Annual Report of the Director of the Mint . . . for 1896. Washington, 1897. pp. 391-2.

† The Puerto Rican peso weighs 24.95 grams, i. e., 2.1 grams less than the Mexican dollar and 1.75 grams less than the United States dollar.

A PUERTO RICAN COUNTERSTAMP 21

keeping small change from leaving the Island for other points where the stringency was even greater. Specimens of these pierced pieces in the cabinet of the American Numismatic Society are all Spanish issues ranging in date from 1870 to 1879.

PLATES

PLATE I



1



4



2



5



3



6



PLATE I



1



4



2



5



3



6



PLATE II



1



2



3



cg
35'
179

JUN 19 1940

NUMISMATIC NOTES
AND MONOGRAPHS

No. 89



MEXICAN DECORATIONS
OF HONOUR

BY
HARROLD E. GILLINGHAM

THE AMERICAN NUMISMATIC SOCIETY
BROADWAY AT 156TH STREET
NEW YORK
1940

PUBLICATIONS

The American Journal of Numismatics, 1866-1920.

Monthly, May, 1866-April, 1870.
Quarterly, July, 1870-October, 1912.
Annually, 1913-1920.

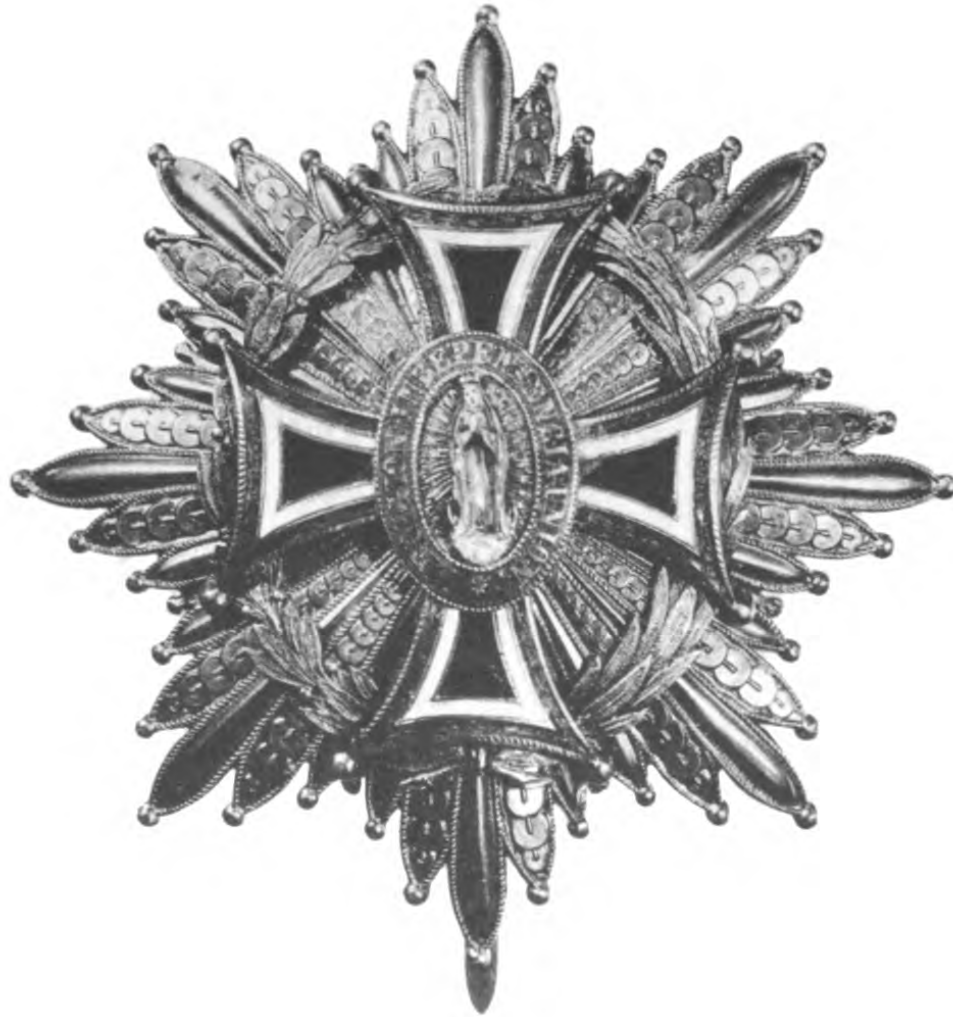
With many plates, illustrations, maps and tables. Less than a half-dozen complete sets of the Journal remain on hand. Price on application.

The numbers necessary to complete broken sets may in most cases be obtained. An index to the first fifty volumes has been issued as part of Volume LI. It may be purchased separately for \$3.00.

The American Numismatic Society. Catalogue of the International Exhibition of Contemporary Medals. March 1910. New and revised edition. New York. 1911. xxxvi, 412 pages, 512 illustrations. \$3.00.

Numismatic Notes and Monographs

9. David Eugene Smith, LL.D. Computing Jetons. 1921. 70 pp. 25 pls. \$1.50.
10. Edward T. Newell. The First Seleucid Coinage at Tyre. 1921. 40 pp. 8 pls. \$1.00.
12. Howland Wood. Gold Dollars of 1858. 1922. 7 pp. 2 pls. 50c.
13. R. B. Whitehead. Pre Mohammedan Coinage of N. W. India. 1922. 56 pp. 15 pls. \$2.00.
14. George F. Hill. Attambelos I of Characene. 1922. 12 pp. 3 pls. \$1.00.
15. M. P. Vlasto. Taras Oikistes (A Contribution to Tarentine Numismatics). 1922. 234 pp. 13 pls. \$3.50.
17. Agnes Baldwin. Six Roman Bronze Medallions. 1923. 39 pp. 6 pls. \$1.50.
18. Howland Wood. Tegucigalpa Coinage of 1823. 1923. 16 pp. 2 pls. 50c.
19. Edward T. Newell. Alexander Hoards—II. Demanhur Hoard. 1923. 162 pp. 8 pls. \$2.50.
20. Harrold E. Gillingham. Italian Orders of Chivalry and Medals of Honour. 146 pp. 34 pls. \$2.00.
21. Edward T. Newell. Alexander Hoards—III. Andritsaena. 1924. 39 pp. 6 pls. \$1.00.
22. C. T. Seltman. A Hoard from Side. 1924. 20 pp. 3 pls. \$1.00.



Order of Guadalupe—Grand Cross
Plaque

NUMISMATIC
NOTES AND MONOGRAPHS

NUMBER 89

NUMISMATIC NOTES AND MONOGRAPHS
is devoted to essays and treatises on subjects relating to coins, paper money, medals and decorations and is uniform with Hispanic Notes and Monographs published by the Hispanic Society of America, and with Indian Notes and Monographs issued by the Museum of the American Indian—Heye Foundation.

PUBLICATION COMMITTEE

AGNES BALDWIN BRETT, *Chairman*

STEPHEN H. P. PELL

THOMAS O. MABBOTT

EDITORIAL STAFF

SYDNEY PHILIP NOE, *Editor*

SAWYER MCA. MOSSER *Associate Editor*

MEXICAN DECORATIONS OF HONOUR

BY

HARROLD E. GILLINGHAM



THE AMERICAN NUMISMATIC SOCIETY
BROADWAY AT 156TH STREET
NEW YORK
1940

**COPYRIGHT 1940 BY
THE AMERICAN NUMISMATIC SOCIETY**

**THE INTELLIGENCER PRINTING CO.
LANCASTER, PA.**

MEXICAN DECORATIONS OF HONOUR

BY HARROLD E. GILLINGHAM

Any outline of the history of Mexico which attempts to be brief is bound to be unsatisfactory, but a few dates help to fix the outstanding events which furnished the occasion for the decorations with which we are concerned.

With the beginning of the nineteenth century, the influence of the ideas of the French Revolution and Napoleon's deposition of Ferdinand VII of Spain resulted in very complicated conditions in Mexico. The revolutionaries Hidalgo and Morelos, both of whom paid with their lives for espousing the cause of freedom, have long since been looked upon as patriots their country delights to honour, despite that they did not achieve their goal. The independence of Mexico is customarily dated from Iturbide's entry into Mexico City on September 27, 1821. The earliest national decorations are, therefore, connected with the struggle for independence—a few having been issued before, but most of them coming after that date.

On May 18, 1822, Iturbide was 'acclaimed' Emperor, with the title of Augustin I. On July 25, 1822, he assumed the title of Emperor only to abdicate February 19, 1823, and in May he sailed for Italy. When he returned the following year with visions of power still before him, he was igno-

rant that he had been outlawed in the interval; he was arrested, and on July 1, 1824, he was executed. A republic was proclaimed on October 10, 1824; its troublous existence was terminated in 1864.

The secession of Texas occurred in 1836 and the war with the United States, 1846-48, resulted in the cession of California, Arizona and New Mexico, upon the payment of fifteen millions of dollars, and the assumption by the United States of claims of citizens of the United States against the Mexican Government. European intervention took place in 1838 and again in 1861. As a result of the controversy with France, Maximilian was crowned Emperor in 1864. Three years later, the French support having been withdrawn, he was executed, and there was a return to the republican form of government. Under the leadership of Porfirio Diaz, President for twenty-six years (1884-1910), there was notable economic progress. With events since 1910, readers should be more familiar—those interested will find a succinct account of conditions in Numismatic Notes and Monographs No. 38, the second edition of "The Coinage of the Mexican Revolutionists," by the late Howland Wood.

Medals of honour and distinctive badges to reward adherents and troops have been established by many of these rapidly changing governments. As a result we have a wide variety of decorations, some of which have not heretofore been published. An attempt to cover the field is made in this monograph in order that collectors and students may have

an accessible record which is as nearly complete as it has been possible for us to make it.

A brief statement should be made regarding the ribbons. The difficulties incidental to securing the ribbons which were worn with the various national decorations are part of the experience of every collector in this field. The suspension device, by its size, frequently gives indications which are valuable when the ribbon is lacking. Unofficial descriptions often show wide variations and the published reproductions, even when official, are sometimes reduced without an indication of the scale of reduction. The American Numismatic Society is especially fortunate in having received from the late General Falls, as part of a bequest, the note books and ribbons accumulated by him in many years of study. These notes by our foremost American authority are very valuable and we have freely referred to them whenever necessary. In addition, we have had recourse to a series of large plates from a publication of the Mexican Government issued in 1901. Both of these have been consulted when the decorations in our possession lacked ribbons. In spite of our efforts to be accurate and to avoid ambiguity, there may be slight discrepancies in the measurements cited. Differences which are slight, that is, differences of a few millimeters, may indicate that our authorities are open to challenge.

The plates issued with the title *Heraldica Militar* illustrate many of the decorations with what must be interpreted as *escudos*—that is, the arm-shields

awarded to the rank and file and which seem to have been sewn to the uniform. Some of these may have been embroidered but many have intricate designs, such as the depiction of battle-fields, which would not have lent themselves to such treatment. Either they must have been of enamelled metal or of some other less durable material. There is not a single *escudo* in our collection; because of the difficulty of obtaining more accurate information, it has been decided to omit them.

MEDAL FOR ACULCO, etc., 1810-1811. In 1810 the first of the movements for independence took place in Guanaxuato, led by D. Miguel Hidalgo, a priest, and Allende, a captain of cavalry. The city of Guanaxuato was captured and the revolutionists were defeated at Calderon in 1811. The Spanish Viceroy, D. Francisco Xavier Venegas, authorized this medal (or, as the Spanish call it, *escudo*, because it is sewn on the coat) for the royalist adherents led by General Calleja. It is an oval 70 x 56 mm.; of gold for the chiefs, silver for the junior officers and of bronze for the troops. In the center is a shield bearing Ferdinand VII's cipher "F.7.," upheld by a lion and dog, symbolical of valour and fidelity; above the shield is a laurel wreath. Around this is inscribed *VENCIÓ EN ACULCO GUANAXUATO Y CALDERON*. The reverse is plain.

SHIELDS FOR 1813, etc. This and the immediately following shields, described by Rosa, seem to have been made of metal.

In 1813, at the bridge of Salvatierra (in Guanaxuato) the Morelos forces were defeated. The viceroy, Felix M. Calleja, ordered an *escudo* or shield for the royalist forces taking part in that victory. It was inscribed *VENCEDOR EN EL PUENTE DE SALVATIERRA 16 DE ABRIL DE 1813*.

In January, 1814, Iturbide dealt a crushing blow to Morelos and for this the viceroy Calleja authorized an *escudo* for the troops taking part in the action of Santa Maria.

Another shield was awarded for the capture of Morelos and is inscribed *SEÑALÓ SU FIDELIDAD Y AMOR AL REY EL DIA 5 DE NOVIEMBRE DE 1815*.

The Spanish viceroy Apodaca authorized an *escudo* for the destruction of the revolutionists under the patriot Mina, in 1817. It is inscribed *AL IMPORTANTE SERVICIO EN SOTO LA MARINA*. Another shield was awarded the troops who pursued and captured Mina, as well as one for those taking part in the capture of Coporo.

In 1821, Apodaca awarded a shield to the royalist troops. It was inscribed *POR LA PRISIÓN DE LOS PRIMEROS ANARQUISTAS DEL AÑO 1821*. Another shield was authorized for the capture of Jalapa (in Tobasco) inscribed *POR LA INTEGRIDAD DE LAS ESPAÑAS*.

MEDAL FOR INDEPENDENCE. This medal was struck, in accordance with a decree of Oct. 12, 1821, in gold, silver and bronze, and there are a

number of varieties. The major difference is indicated by the legend on the reverse. Those inscribed *PRIMA EPOCHA* and *PRIMERA EPOCA* were awarded by Iturbide to supporters who espoused his cause before March of 1821.* The pieces bearing the legend *SEGUNDA EPOCA* were given to those who followed the safer course and who did not ally themselves with his cause until later; it may be questioned that a strict adherence to the date cited in the decree for distinguishing the two 'Epochs' was possible or even attempted. It is not clear whether the pieces of the second epoch were struck in all three metals.

The design of the obverse consists of two globes from which hang the links of a broken chain. The globe to the left is inscribed *AMERICA SEPTENTRIONALIS*, with *MEXICO* in smaller letters beneath. The one on the right bears the words *EUROPA ASIA AFRICA*. Above the globes are three interlocked rings with inscriptions which vary, as do also the legends which curve with the rim at the top and bottom of the field.

The earlier of the First Epoch pieces bears the legend *SPONSIONE TRIPLICI ORBEM AB ORBE SOLVIT*. The interlocked rings are inscribed *RELIGIO*, *CONCORDIA* and *SUMMA*

* In an article published in the *Coin Collector's Journal* (May, 1936, pp. 30-34) Dr. A. F. Pradeau summarizes the historical data. He believes the first distribution to have been small in number owing to an early breaking of the die, but he states that the government records do not show the quantity struck.

LIBERTAS. The reverse bears *PRIMA EPOCHA* above the slender wreath, and the engraver's name, *J. GUERRERO*, in small letters, below. A specimen in silver is in the American Numismatic Society's collection. It seems probable that this is the one described in the *American Journal of Numismatics*, 1871, Vol. V, p. 50.

The second form for these First Epoch pieces bears on the reverse *PRIMERA EPOCA* instead of the Latin form of the earlier die; the obverse shows striking differences from the earlier issue. The top-most of the interlocked rings is now inscribed *INDEPENDENCIA*. The legend reads *CON LA TRIPLE GARANTIA* at the top; *DESATO A UN ORBE DE EL OTRO* at the bottom. Whether struck in gold and silver as well as in bronze is not certain. The pieces having the reverse inscribed *SEGUNDA EPOCA* show the obverse used with the latter of the two obverses previously described—that is, *CON LA TRIPLE GARANTIA*. Dr. Pradeau gives the weights as 53.5 grams for the gold, 48 grams for the silver and 45.5 grams for the bronze. The bronze specimens of the second form are common.

CROSS FOR INDEPENDENCE. This cross was authorized for Iturbide's supporters on October 12, 1821, in gold, silver and bronze, for those who participated in the war for independence. It is a white-enamelled Maltese cross with rays in the angles and with a suspension-device of palm and

olive branches. On the obverse medallion are two globes with connecting links broken—indicative of the separation of the American colonies from Spain—encircled by a band enamelled green on the upper half and red on the lower. The reverse medallion is inscribed *1^a EPOCA*. The bronze medal for the troops is without enamel. During the second epoch of independence the ribbon was changed to the national colors of green, white and red.

Rosa gives the obverse circular band as inscribed *RELIGION SUMA LIBERTAD CONCORDIA* and the reverse band inscribed *PRIMA EPOCA* with *SPONTIONE TRIPLICA* in the center.

THE ORDER OF GUADALUPE. An apparition of the Virgin is said to have appeared to an Indian, Juan Diego, at a village on the shore of Lake Texaco, near Mexico City, in 1531. This spot was made a place of pilgrimage, and Our Lady of Guadalupe became the patron saint of Mexico. The Imperial Order of Guadalupe was not, however, founded until 1822, by the emperor Augustin de Iturbide. It shared in his downfall. President Don Antonio Lopez di Santa Anna (1795–1876) reorganized it November 11, 1853, as the Order of the Madonna of Guadalupe, and adopted new statutes for the order. It was suppressed in 1855. Maximilian revived it June 30, 1863, and re-constituted the order April 10, 1865, with five classes. A silver medal for one of these classes is illustrated on Plate XIV. He provided for awards to foreigners as

well as natives, for both civil and military merit. It ceased to exist officially after the execution of Maximilian, on June 19, 1867.

The decoration is a ball-tipped cross pattée, enamelled red in the center, with white and green bands on the outer edges. Gold rays are in the angles and the cross is superimposed on palm and olive branches, enamelled green. The whole has as its suspension device, the Mexican eagle with a serpent in its beak. On the obverse white medallion is a figure of the Virgin, encircled by a green band inscribed *RELIGION INDEPENDENCIA UNION* *. The reverse medallion of white is inscribed *AL PATRIOTISMO HEROICO* when awarded for military purposes, and *AL MERITO Y VIRTUDES* when given for civil merit. The ribbon (38 mm.) is dark blue with violet edges 6 mm. wide.

THE STAR FOR CORDOVA is an eight-pointed, ball-tipped, white-enamelled star surmounted by the national eagle, above which is a ribbon bar inscribed \varnothing^4 *DIVISION*. On the red-enamelled center of the star is a conventionalized flower and on the reverse *AÑO 1º DE LA INDEPENDENCIA*. The ribbon is green, white and red, in equal stripes. The illustration is taken from the specimen of the American Numismatic Society; it differs in the suspension from the *Heraldica Militar* cut, and the reverse is blank.

CROSS FOR TEPEACA, 1821. This was given participants in the engagement at Tepeaca, April 1821, and is a white-enamelled cross of four pointed arms, ball-tipped, superimposed on gold-enamelled palm and green-enamelled olive branches and with a suspension device of similar branches. On the obverse blue medallion is depicted the gates of the city encircled by a white band inscribed *VIRTIO SU SANGRE EN TEPEACA*, and on the reverse is 1821. The inscription indicates that the award was for a participant who was wounded. The watered ribbon (24.5 mm. wide) is white with a green center stripe (4 mm.) and red edges (4 mm.). A similar cross bears on the obverse *SE DISTINGUIO EN TEPEACA* (therefore, for those who won distinction). The moiré ribbon (25 mm.) is white with a red center stripe (5 mm.) and green edges (4.5 mm.). Another variant has on the obverse *CONCURRIO EN TEPEACA* (i. e., for a participant). The watered ribbon (24.5 mm. wide) is white with two narrow middle stripes, green and red, each 1.5 mm. wide; the left edge (4 mm.) is green, the right red (4 mm.).

CROSS FOR ATZCAPUTZALCO. A gold cross, enamelled red, with floreated arms and with gold rays in the angles, bears on the obverse medallion an image of the church where the royalist troops took refuge, and on the reverse the inscription *VIRTIO SU SANGRE POR LA INDEPENDENCIA DE MEXICO EN 19 DE AGOSTO DE 1821*. The ribbon (26 mm. wide) is half red and half white.

Another cross is enamelled white and bears on the reverse *CONCURRIO A LA BRILLANTE ACCION DE 19 DE AGOSTO DE 1821* and is suspended by a ribbon (26 mm.) half yellow and half dark blue, while still another variant is enamelled green and has on the reverse *SE DISTINGUIO EN LA BRILLANTE ACCION DE 19 DE AGOSTO DE 1821*, and the ribbon (26 mm.) is half green and half red.

Rosa* illustrates a white-enamelled cross with angulated arms and with the reverse inscription *CONCURRIO A LA BRILLANTE ACCION DEL 19 DE AGOSTO DE 1821 POR LA INDEPENDENCIA DE MEJICO*, and with a scarlet and blue ribbon.

CROSS FOR TOLUCA. This is an elongated Maltese cross, enamelled white, superimposed upon a green-enamelled cross, the ball-tipped ends of which extend beyond the arms of the white-enamelled cross. The oval obverse medallion is inscribed *DENUEDO EN LA BATALLA Y PIEDAD CON LOS VENCIDOS* and is encircled by a red band. On the reverse is *19 DE JUNIO DE 1821 AL FRENTE DE TOLUCA*. The watered ribbon is bright red, 26 mm. wide.

MEDAL FOR TAMPICO, 1821. This was authorized by the national Congress April 27, 1833, for the troops taking part in the battle of Tampico,

* Rosa, A. *Numismatica Independencia de America*. Buenos Aires, 1904. p. 14.

September 11, 1821. It is sometimes called the *Medal of Honour for Tampico*. The medal is of gold or silver, in the form of a six-armed, double-pointed, ball-tipped cross with rays in the angles. On the obverse center is the Mexican eagle encircled by a band inscribed **ABATIO EN TAMPICO** *EL ORGULLO ESPANOL*. On the reverse is an upright sword and palm branch encircled by *EL CONGRESO NACIONAL DE 1833*. The watered ribbon (26 mm.) is dark green. Rosa described the reverse inscription as *EL CONGRESO GENERAL EN 1833*, and gives the ribbon as blue and white. The *escudo* or shield for the troops bore in the center the national eagle over laurel branches with *VENCEDOR DE LOS ESPAÑÓLES EN TAMPICO* above.

ZACATECAS MEDAL FOR DURANGO, 1821. This oval bronze medal, 42 x 28 mm. with scrolled edges, was awarded by the State of Zacatecas. On the obverse is an upright trumpet and *VIVA LA UNION*, while the reverse is inscribed *A LOS VENCEDORES DE DURANGO LOS NACIONALES DE ZACATECAS * 1821 **. The Fonrobert catalogue (No. 6784) shows an engraving of this piece.

CROSS FOR JUCHI. This probably was authorized for the patriot forces taking part in an engagement at Juchi on April 3, 1822. It is a white-enamelled narrow-armed cross with divided ends ball-tipped, and superimposed on branches of palm

(at the left) and olive. On the white-enamelled ribbon bar is the word *JUCHI*; the watered ribbon (26 mm.) is bright red.

CROSS FOR VERA CRUZ, 1822. Iturbide was crowned emperor on July 21, 1822. Shortly thereafter Antonio López de Santa Anna, Captain-general of Vera Cruz, proclaimed an independent republic. He was defeated at Jalapa and driven into Vera Cruz. This decoration is a blue-enamelled Maltese cross superimposed on palm and olive branches and surmounted by a knot of ribbon. On the obverse medallion is the fortress of Vera Cruz encircled by a white band inscribed *VIGILANCIA Y VALOR OCTUBRE 27 DE 1822*. On the reverse is *RECHAZO AL ENEMIGO EN VERA CRUZ EN 27 DE OCTUBRE DE 1822*. The watered ribbon (26 mm.) is half dark blue and half white.

CROSS FOR ULUA, 1825. This is a gold cross pattée, enamelled red with gold edges and superimposed on palm and laurel branches. On the obverse blue medallion is a castle encircled by a white band inscribed *AL MERITO EN EL ASEDIO DE ULUA * 1825 **. On the reverse is *RENDICION DE ULUA EN 1825*. The moiré ribbon (27 mm.) is yellow. Rosa gives the reverse inscription as *25 DE SETBRE DE 1823 HASTA 23 DE NOBRE DE 1825*.

ZACATECAS MEDAL FOR TAMPICO, 1829. During the presidency of Guerrero (1825-1831) a

Mexican squadron attacked Spanish ships off Cuba. This led to an attempt by Spain to reconquer Mexico. Santa Anna checked the Spanish forces at Tampico, and the state of Zacatecas awarded this medal to their militia taking part in this engagement. It is an oval of gold, silver or bronze, 50 x 38 mm., having on the obverse the arms of the state, trophies, mountains, a citadel and sun in the upper field, encircled by *EL ESTADO DE ZACATECAS AL VENCEDOR DE TAMPICO 1829*. On the reverse is the national eagle, with a radiate liberty cap in the upper field, the whole encircled by laurel branches superimposed on flags and trophies of war.

MEDAL FOR PUEBLA, 1833. An oval medal, 45 x 35 mm., in silver or bronze, on the obverse of which is the Mexican eagle and *EL GOBIERNO DE LA UNION A LOS HEROICOS DEFENSORES DE PUEBLA EN 1833*. On the reverse, an open book and laurel branches, with the legend *LA FEDERACION TRIUNFANTE EN EL ESTADO DE PUEBLA CONTRA LA TIRANIA Y FANATISMO*.

The catalogue of the Salbach collection, sold September 11, 1911, shows bronze variants, 46 x 30 mm., 45 x 29 mm., and 39 x 31 mm. (Nos. 3754-56). The silver specimen in the American Numismatic Society collection has a loop—the bronze is without one.

CROSS FOR TEXAS, 1836. Awarded the Mexican troops under Santa Anna who opposed the

Texans' struggle for independence. The cross is a white-enamelled five-pointed star, with ball tips and with golden arrowheads in each angle, the whole suspended from a wreath of palm and olive leaves. On the obverse medallion is the Mexican eagle, and on the surrounding band *TEXAS EN 1836*.^{*} On the reverse medallion is *COMBATIO POR LA INTEGRIDAD DEL TERRITORIO NACIONAL*. The ribbon is of three equal stripes—red, green and red.

CROSS FOR MATAMOROS 1836. Similar to the decoration for Texas, save for the substitution of the word MATAMOROS for that of "Texas."

CROSS FOR ULUA, 1838. Awarded the troops who defended the fortress of San Juan de Ulua, near Vera Cruz, during the bombardment by the French fleet in 1838, after some foreign shops in Mexico had been pillaged by native rioters. This is a cross formed of four towers, resting on a gold palm and a green olive-branch, having on the obverse medallion the Mexican eagle encircled by a white-enamelled band inscribed *ULUA EN 1838*. The reverse medallion is inscribed *POR EL HONOR NACIONAL* and the watered ribbon (21 mm.) is red with a white stripe (9 mm.) in the center.

MEDAL FOR ULUA, 1838. Awarded to the troops at the same time as the above cross. Padig-

^{*} The *Heraldica Militar* gives the date as 1835.

lioni describes this as having on the obverse the national eagle encircled by *POR LA INTEGRIDAD NACIONAL* and on the reverse *ULUA EN 1838*, surrounded by *RAMON O FABERA*.

MEDAL FOR VERA CRUZ, 1838. Padiglioni* describes a medal awarded the defenders of Vera Cruz when it was captured by the French. On the obverse is inscribed *EN VERA CRUZ POR SU VALOR* and on the reverse *1838* encircled by *EL 5 DE DICIEMBRE*. On the ribbon bar is *MERECIO BIEN DE LA PATRIA*.

CROSS FOR CAMPECHE, 1840. During the presidency of Antonio Bustamante his authority was threatened by uprisings and the secession of several states, among them Yucatan (1841) and Campeche. This opposition culminated in the fall of the Bustamante party and the restoration of Santa Anna to the presidency in 1841. This decoration is a white-enamelled cross with ball-tipped arms and rays in the angles, and suspended from palm and olive branches. On the obverse medallion is a gold Mexican eagle encircled by a white band inscribed *AL VALOR Y CONSTANCIA EN CAMPECHE*, and on the reverse *1840*. The ribbon (27 mm.) is half red and half dark blue.

CROSS FOR TABASCO, 1840. This was awarded for the engagement at Tabasco during the Yucatan insurrection and is similar in all details to that for

* *Motti delle Medaglie decorative* . . . , p. 60.

Campeche, save for the substitution of the word *TABASCO* for that of "Campeche." The watered ribbon (27 mm.) is half white and half green.

CROSS FOR JULY 15, 1840. This was authorized by the National Congress and is a white-enamelled cross pattée, superimposed on thirty-two gold arrows with heads to the center. The medallion is inscribed *15 DE JULIO DE 1840*, and around this, resting on the cross arms, is a white circular band inscribed *A LA FIDELIDAD Y AL DENUE-DO EN EL COMBATE. EL CONO NAC^{AL}*. On the reverse medallion is *1840*. The watered ribbon (27 mm.) is dark blue with a white stripe (8 mm.) in the center. This decoration was awarded to those forming the column of attack. To those who served only in the line of operations the circle was inscribed *A LA FIDELIDAD Y AL VALOR EL CONGRESO NACIONAL*. The watered ribbon (27 mm.) was dark blue, or white with a blue stripe (9.5 mm.) in the center, according to position.

CROSS FOR MILITARY COLLEGE. This is a white-enamelled cross with four arms having pointed ends, ball-tipped and with small rays in the angles, forming a square. On the obverse medallion are two olive branches. The reverse is not given and the ribbon is bright red. A similar cross bears a large circular medallion superimposed on a square, inscribed *EN SU NIÑEZ SALVO A LA CAPITAL DE LA REPUBLICA EN LA GLORIOSA JORNADA DEL 15 AL 26 DE JULIO DE 1840*. The

ribbon shows three equal stripes of white, blue and white.

CROSS FOR MORELOS, 1840. This was awarded to the defenders of Santa Rita Morelos against the Texans. It is a five-pointed ball-tipped white-enamelled star, surmounted by palm and olive branches, having at the center the national eagle encircled by the inscription *SANTA RITA MORELOS 1840*, and on the reverse *COMBATIO POR LA INTEGRIDAD DEL TERRITORIO NACIONAL*. The watered ribbon (27 mm.) is red with green edges (6 mm.). Padiglioni* describes a medal for Morelos with the eagle encircled by *RITA MORELOS 1840*, but gives no reverse.

CROSS FOR LIPANTITLAN, 1842. This is a red-enamelled cross of seven arms, bearing on the medallion a pennant and staff with a right arm and hand holding a sword which rests on the pennant. Encircling this is a white band inscribed *VALOR ACREDITADO EN TEXAS JULIO 7 1842*. On the reverse is *LIPANTITLAN JULIO 7 DE 1842*. The watered ribbon (24 mm. wide) is dark green with a 10 mm. horizontal stripe of red.

CROSS FOR CAMPECHE, 1842. Padiglioni gives a cross having on the obverse the national eagle and *CAMPECHE 1842* and on the reverse *COMBATIO CONTRA LAS TEKANOS*.

* *Motti delle Medaglie decorative* . . . , p. 59.

CROSS FOR BEJAR AND SALADO, 1842. This is a ball-tipped, red-enamelled, five-pointed star having on the obverse the Mexican eagle encircled by a band inscribed *COMBATIO POR LA INDEPENDENCIA DE MEXICO* and on the reverse *11 Y 18 SEPBRE 1842* encircled by *EN BEJAR Y EL SALADO*. The watered ribbon (25 mm. wide) is half gray, half red.

CROSS FOR MIER, 1842. Awarded for one of the many engagements on the Rio Grande following the secession of Texas. It is a green-enamelled cross pattée with rings and arrow points on each arm and graduated rays in the angles, forming a square. On the obverse medallion is *AMPUDIA* with two laurel branches encircled by *PERICIA VALOR DISTINGUIDO*, and on the reverse is *VENCIO EN MIER EN 20 DE DICIEMBRE DE 1842*. The watered ribbon (29 mm. wide) is white with the left edge red, the right green, each 6 mm. wide.

CROSS FOR TISKOKOB, 1843. This is a red-enamelled square suspended from one corner and with arrow heads on each side. On the obverse center medallion is the Mexican eagle encircled by a band inscribed *VALOR Y CONSTANCIA POR LA UNION NACIONAL*. On the reverse is *VENCIO EN TISKOKOB EN 10 DE ABRIL DE 1843*. The watered ribbon (28 mm. wide) is red with the left edge white, the right edge green, each 4 mm. wide.

CROSS FOR CHINA DE YUCATAN, 1843. The cross arms of this decoration are formed of four cannon joined by a wreath. In the medallion is a coastal scene encircled by a white band inscribed *VENCIO EN CHINA DE YUCATAN* and on the reverse is *EN 4 DE FEBRO DE 1843*. The watered ribbon (31 mm. wide) is dark blue with red edges, each 5.5 mm. wide.

NAVAL MEDAL FOR CAMPECHE, 1843. This is composed of four anchors joined by a wreath, having on the medallion a ship encircled by a band inscribed *ABATIO CON DENUEDO LA ESCUA TEXANA*. On the reverse medallion is *EN CAMPECHE EL 16 DE MAYO 1843*. This engagement with the fleet of the Texans (at that time in alliance with the insurgents of Yucatan) seems to have been claimed as a victory by both sides. The watered ribbon (25 mm. wide) is green with a red center stripe and red edges, each 2.5 mm. wide.

MEDAL FOR TABASCO, 1843. Awarded to those taking part in the capture of San Juan Bautista in Tabasco. The decoration is a white-enamelled cross with pointed, ball-tipped ends, having on the medallion an anchor and two swords encircled by a band inscribed *VENCIO CONTRA LA INGRATITUD Y LA PERFIDIA*. On the reverse is *EN TABASCO EL 11 JULIO 1843*. The watered ribbon (23.5 mm. wide) is white with a light green center stripe 7.5 mm. wide.

MILITARY SERVICE CROSS. This cross was established June 25, 1841, suppressed in 1901 and revived December 11, 1911, to reward long service in the army. The first-class decoration is in the form of a cross, the arms of which are formed of three green-enamelled leaves, superimposed on palm and laurel branches and surmounted by the national eagle. In the center is an oval medallion of red enamel bearing a gold female figure holding a staff in the left hand and resting the right hand on a pillar. An encircling white-enamelled band is inscribed *RECOMP. NAL A LA CONSTANCIA EN EL SERV. MIL^R*. The reverse oval is inscribed *CREADA EN 1841* Y CONCED. POR 35 ANOS DE SERV**. The cross is suspended from the neck by a gold cord and is also accompanied by a plaque of gold and silver rays, bearing a duplication of the obverse of the cross, on a gold wreath. For thirty years' service the decoration is similar save for the number of years on the reverse inscription, and the cross is surmounted by a green-enamelled bar inscribed *CONSTANCIA* instead of the eagle, and the plaque has all rays silver. The cross is worn around the neck by a white ribbon edged with green. The third-class decoration is awarded for twenty-five years' service and is worn on the left breast suspended by a bar and ribbon similar to the second class, but no plaque is worn with this decoration. Wahlen, in his supplementary publication of 1869, says this decoration was "instituted" by Maximilian, in a decree of August

10, 1865, and that he changed the decoration to a white cross bearing a gold medallion with a crowned eagle encircled by a green band inscribed *CONSTANCIA*. The ribbon was changed to red with a white band in the center. There were two classes, only—the first for fifty years and the second for twenty-five years of service.

NAVAL SERVICE CROSS. This decoration is similar in design to the Military Service Cross and has the same number of classes. The oval, white-enamelled band on the obverses of the crosses and plaques is inscribed: *RECOMP. A LA CONST. EN EL SERV. NAVAL MILITAR*, while the reverse of the first-class cross bears the inscription: *CREADA EN 16 DE SEPT. DE 1891 · Y CONCED. POR 30 AÑOS DE SERV.* The second and third classes are the same except for the number of years, 25 for the second class and 20 for the third. The decorations are worn and suspended in the same manner as the Military Service Crosses.

NAVAL MEDAL OF MERIT. This decoration for officers has two classes, similar in design and mode of wearing. Each is made up of an oval having a red-enamelled center and a white border on which there is the inscription: *PREMIO POR ACCION HEROICA*, and *PRIMERA CLASE* for the first class decoration, *SEGUNDA CLASE* for the second. Superimposed on this oval is an anchor on the top of which is perched an eagle holding a serpent and attached to the eagle is a plain, rec-

tangular suspension bar. The metal of the first class decoration and its suspension device, which is slotted to take a yellow, watered ribbon, 25 mm. wide, is gold or gilt while the second class piece of silver hangs from a red, watered ribbon also 25 mm. wide.

For seamen, the Naval Medal of Merit is round, 30 mm. in diameter, and bears on the obverse within an open laurel wreath the six-line inscription: *PREMIO POR ACCION HEROICA PRIMERA CLASE*, for the first class medal in gold or gilt; for the second class silver medal the designation changes to *SEGUNDA*. Both medals have plain, thin suspension bars of appropriate metal and hang from red ribbons similar to the second class officer's decoration. The reverses of these two pieces are similar to the obverses with the wreath omitted.

CROSS FOR MEDICAL CORPS. This is a red-enamelled cross of five arms, superimposed on a laurel wreath, bearing on the red center medallion a gold eagle encircled by a white band inscribed *REPUBLICA MEXICANA CUERPO MED. MILIT.* The ribbon (25 mm.) is red with a black stripe in the center. The plaque is a cross as above described, superimposed on rays bearing a white band inscribed *SERVICIOS HECHOS A LA HUMANIDAD*.

CROSS FOR UNITED STATES WAR. This campaign is usually spoken of by the Mexican writers as *La Invasion Norteamericana*. The decora-

tion was awarded the troops who fought under General Pedro de Ampudia, defending Monterey against the United States Army led by Generals Zachary Taylor and W. J. Worth. Monterey fell on September 24, 1846. On the obverse of the cross is a bust of General Ampudia, encircled by a band inscribed *PERICIA Y VALOR DISTING'DO*. On the reverse is *COMBATIO POR LA INTEGRIDAD DEL TERRITORIO NACIONAL*. A variant has around the bust, on the obverse, *VALOR DISTINGUIDO*.

MEDAL FOR UNITED STATES WAR. This is a gold or silver medal 30 mm. in diameter, edged on one side with a palm branch and on the other by a laurel branch, and surmounted by an eagle. On the obverse white medallion are two crossed swords encircled by the inscription *COMBATIO EN DEFENSA DE LA PATRIA*, and on the reverse *LA PATRIA AL MERITO EN 1847*. The watered ribbon displays five equal stripes, red in the center, white on each side and green on the edges. This information is derived from the cut for *Heraldica Militar*, Pl. II, No. 11, and Sculfort's description of a piece in the *Musée de l'Armée*, p. 119.

CROSS FOR ANGOSTURA. Awarded the troops taking part in the battle on the plains of Angostura against the United States troops, which is better known as the battle of Buena Vista. The decoration is a four-armed cross with pointed, ball-tipped ends and inverted flags in the angles and

palm and laurel branches below. In the obverse center is a small square, set diagonally, on which is an eagle; on the reverse is inscribed *VALOR ACREDITADO 1847*. The ribbon, 31 mm., is dark blue with red center stripe 9 mm., and red edges 2.5 mm., and the bar is inscribed *BATALLA DE LA ANGOSTURA*. Padiglioni* describes the cross as inscribed on the arms *VALOR Y SUFRIMIENTO* and on the medallion *AL EXERTO DEL NORTE CONGRESO NACIONAL*, while the ribbon bar bears the inscription *ANGOSTURA 22 Y 23 DE FEBRERO DE 1847*.

The American Numismatic Society's specimen reads *AL VALOR Y SUFRIMIENTO*, on the arms; **DEL * EJERCITO * DEL * NORTE*, on the band of the square center medallion. The enamelled suspension-bar is inscribed as in Padiglioni's description. The reverse square center medallion is inscribed in four lines: *AL MANDO DEL GENERAL SANTA ANNA*, and an ornament below. The ribbon, 27 mm., is white with a red center stripe, 3.5 mm., and green edges 3.5 mm.

MEDAL FOR VERA CRUZ, 1847. Awarded the troops who defended that city when besieged and captured by the United States troops under General Winfield Scott, March 7th to 29th, 1847. The medal is of bronze, 27 mm. in diameter, with military trophies on the obverse and the reverse inscribed *AL PATRIOTISMO Y VALOR ACRED-*

* *Motti delle Croci decorative* . . . , p. 21.

ITADOS EN DEFENSA DE LA H. (Heroica) VERACRUZ 1847. The watered ribbon, 25 mm., has three equal stripes of green, white and red. A variant 30 mm. has in the center *EL AÑO DE 1847* with the above motto encircling.

Padiglioni* describes a cross with the same inscription as that of this medal.

CROSS FOR CHURUBUSCO, 1847. Created for the troops who defended this village, five miles from the city of Mexico, against the United States forces under General Scott. Churubusco fell August 20, when an armistice was agreed upon. The Mexicans renewed hostilities on September 8 and the City of Mexico surrendered on the 13th. The decoration is a gold or silver Maltese cross, enamelled red, with rays in the angles and a wreath of palm and laurel above. On the obverse medallion is the national eagle encircled by a white band inscribed *DEFENSOR DE LA INDEPENDENCIA. EN CHURUBUSCO* and on the reverse within a laurel wreath is *LA PATRIA AL MERITO 1847.* The watered ribbon, 25 mm., is of four equal stripes, white, red, green and white. A variant of this cross in the Musée de l'Armée of Paris has on the obverse *CHURUBUSCO 1847* and on the reverse *AGOSTO 20; 8-12 Y 13 DE SEPTIEMBRE.* Padiglioni gives the obverse as *COMBATIO EN DEFENSA DE LA PATRIA* and the reverse as *26 AGOSTO 1847.* A cross, which he calls for the

* *Motti delle Croci decorative* . . . , p. 21.

battle in the Valley of Mexico, is inscribed on the reverse *VALLE DE MEXICO*.

MEDAL FOR CHAPULTEPEC, 1847. Awarded for participation in the battle against the United States forces at Molino del Rey (The King's Mill) near Chapultepec, which was the last battle of the United States-Mexican war. It is a white-enamelled shield, with two crossed swords in the center and the legend *COMBATIO POR LA INTEGRIDAD DEL TERRITORIO NACIONAL* within a silver palm branch and a green laurel branch. On the reverse is *CHAPULTEPEC 8, 12 Y 13 DE SEPTIEMBRE DE 1847*. The suspension device is in the form of an eagle. Padiglioni* gives the obverse inscription as *COMBATIO POR LA PATRIA 1847* and the reverse as *CHAPULTEPEC 8, 9, 10, 11, 12, 13 DE SEPTIEMBRE DE 1847*.

CROSS OF HONOR, 1847. This is a double-pointed, ball-tipped cross of red enamel, with rays in the angles, having on the obverse red medallion the Mexican eagle, encircled by a white band inscribed *8, 12 Y 13 DE SEPTIEMBRE DE 1847*. On the reverse is *LA PATRIA AL MERITO EN 1847*. The ribbon displays the national colors.

YUCATAN 1847-50. To forces taking part in the suppression of Indian uprisings of 1847-1850, four decorations were awarded. Generals and Field Officers received a white-enamelled cross superim-

* *Motti delle Croci decorative* . . . , p. 21.

posed on a laurel wreath. The obverse medallion is inscribed *EL GOBIERNO NACIONAL* encircled by a band bearing the legend *A LOS DEFENSORES DE LA CIVILIZACION* while the reverse medallion is inscribed 1^A. *EPOCA YUCATAN*. Junior officers and men received a uniface medal, silver to officers, bronze to the ranks, inscribed *EL GOBIERNO NACIONAL* 1^A. *EPOCA* between laurel branches. The cross for Generals is suspended around the neck from a watered ribbon, 25 mm. wide, composed of three equal stripes of white, red and white, and the other decorations are suspended from a similar ribbon on the breast. Crosses and medals inscribed 2. *EPOCA* but otherwise the same as the 1^a. *Epoca* pieces, are worn in the same manner suspended from a ribbon having three equal stripes of red, white and red, the reverse of the previous ribbon.

CROSS FOR MATAMOROS 1851-1852. This was awarded to the troops in the several engagements against the Indians of the northern frontier who became troublesome during the presidency of Mariano Arista. It is a white-enamelled Maltese cross, ball-tipped and surmounted by palm and olive branches, having on the obverse medallion the motto, *NI AL INCENDIO DE SU HOGAR SUCUMBIO*. The reverse is not given; the ribbon is pale yellow, moiré, 25 mm. wide.

MEDAL FOR MATAMOROS, 1851-1852. This medal was issued in gold, silver and bronze and

awarded the troops for the same service as the preceding cross. It is 30 mm. in diameter and bears on the obverse, between palm and olive branches, *AL VALOR Y LEALTAD ACREDITADOS EN DEFENSA DE LA FRONTERA DEL NORTE 1851 Y 1852*. On the reverse is *EL CONGRESO MEXICANO EN 1852*. The moiré ribbon is of five equal stripes—red, green, white, green and red, each 5 mm. wide.

CROSS FOR SONORA, 1852. Awarded to those who aided in suppressing the uprising in Sonora in 1852. A four-armed white-enamelled cross with pointed, ball-tipped ends, superimposed on a laurel wreath, having on the obverse *AL VALOR ACREDITADO EN SONORA 1852* and on the reverse *EL GOBIERNO DE LA REPUBLICA MEXICANA*. The watered ribbon (25 mm.) is orange with a green stripe (5 mm.) in the center. There are two classes; the wreath and the rims of the cross-arms are gilt for the higher class.

CROSS FOR GUAYAMAS, 1854. This is a similar cross of blue enamel, surmounted by palm and olive branches, bearing on the obverse a light-house encircled by a white band inscribed *COMBATIO POR LA PATRIA*, and on the reverse *GUAYAMAS JULIO 13 DE 1854*. The watered ribbon (36 mm.) is composed of nine equal stripes, five blue and four white.

MEDAL FOR LA PAZ, 1856. Awarded for suppressing the clerical uprising in the seaport town

of La Paz, in Lower California, in 1856, during the presidency of Alvarez. The medal is silver gilt, uniface, encircled by olive branches, the leaves of the left one being green-enamelled, and bearing on the white-enamelled center *RESTAURADOR DE LA PAZ 1856*. The watered ribbon (25 mm.) is white edged with light blue (4 mm.).

CROSS FOR TEKAX, 1857. One of the uprisings of the Indians of Yucatan was suppressed at the town of Tekax. This cross was awarded to the officers engaged. A white-enamelled, ball-tipped Maltese cross with rays in the angles, bears on the center medallion the inscription *POR SU VALOR Y DENUEDO EN TEKAX LA PATRIA AGRADECIDA* and on the reverse *14 Y 15 DE SEPTIEMBRE DE 1857*. The ribbon (24 mm.) shows the national colors. Bars were worn on the ribbon bearing the name of the recipient. To the soldiers a bronze medal or *escudo* (to be worn on the sleeve) was awarded. The inscription is that on the obverse of the cross.

CROSS FOR VERA CRUZ, 1860. This was a gold or silver five-armed cross enamelled dark green, with double, ball-tipped points and suspended from a palm and laurel wreath. The obverse medallion is inscribed *BOMBARDEO DE VERA CRUZ* and the reverse *MARZO DE 1860*. The watered ribbon is red, 25 mm. wide.

MEDAL FOR PACHUCA, 1861. Awarded the 'constitutionalists' in one of the engagements follow-

ing the overthrow of Miramon's government and before the French intervention of 1862. It is a uniface, oval, gold or silver medal, 25 x 22 mm., edged with laurel branches and has the national eagle (on the gold medal only) as its suspension device. The inscription reads *TRIUNFO EN PACHUCA EL 20 DE OCTUBRE 61 DEFENDIENDO LA CONSTITUCION*. The watered ribbon (24 mm.) is red with a dark green stripe (10 mm.) in the center.

MEDAL FOR ACULTZINGO, 1862. This was awarded following the battle of Acultzingo, to the troops who resisted the advance of the French forces from Vera Cruz to the City of Mexico. It is an oval gold, silver or bronze medal, 26 x 20 mm., having on the obverse between two laurel branches, *LA REPUBLICA MEXICANA A SUS VALIENTES HIJOS* and on the reverse *COMBATIO CON HONOR EN LAS CUMBRES DE ACULTZINGO CONTRA EJERCITO FRANCES EL 28 DE ABRIL DE 1862*. The gold medals have as a suspension device an eagle above palm and laurel branches or a palm wreath only, according to the grade of award. The ribbon (22 mm.) displays the Mexican national colors.

MEDAL FOR THE BATTLE OF MAY 5, 1862. Awarded the troops engaged in the battle of Puebla May 5, 1862, under Generals Zaragoza and Porfirio Diaz. French troops numbering six thousand, commanded by General Laurencez, were defeated by the Mexicans. The medal is oval and similar in

size and design to that for Acultzingo, with the same inscription on the obverse but with the reverse inscribed *TRIUNFO GLORIOSAMENTE DEL EJERCITO FRANCES DELANTE DE PUEBLA EL 5 DE MAYO DE 1862*. The ribbon displays the national colors.

MEDAL FOR DEFENDERS OF PUEBLA, 1862. A round medal (25 mm.) was given those who fought within the city of Puebla. It bears the same obverse as the medal for Acultzingo, but on the reverse is *DEFENDIENDO A LA CIUDAD DE PUEBLA CONTRIBUYO AL GLORIOSO TRIUNFO CONTRA EL EJERCITO FRANCES EL 5 DE MAYO DE 1862*. For the co-operating troops the reverse inscription is *DERROTANDO A LOS TRAIADORES EL 4 DE MAYO CONTRIBUYO EFICAZMENTE AL TRIUNFO ALCANZADO EN PUEBLA CONTRA EL EJERCITO FRANCES EL 5 DE MAYO DE 1862*.

CROSS FOR SIEGE OF PUEBLA, 1863. After the first defeat of the French in 1862, thirty thousand additional troops under General Forey arrived and advanced to the capital. They besieged and reduced the city of Puebla and entered the City of Mexico on June 7, 1863. This decoration was authorized after the fall of Maximilian for the defenders of the city. It is a gold, silver or bronze-gilt cross of three arms, enamelled green, having on the obverse oval red medallion the national eagle surrounded by *DEFENDIO A PUEBLA DE*

ZAR^A. (Zaragoza) EN 1863 CONTRA EL EJERCITO FRANCES. The white, watered ribbon (25 x 25 mm.) has two diagonal stripes of green and red, each 2 mm. wide and 2 mm. apart, running from the lower left to the upper right corners.

CROSS FOR PUEBLA, 1867. Awarded to those taking part in the battle of April 2, 1867, against the French forces of Maximilian. It is a Maltese cross of gold, silver or bronze, with the arms enamelled green, white, red and white, superimposed on a laurel wreath and with an eagle as the suspension device. On the obverse medallion is *PREMIO AL VALOR MILITAR* and on the reverse *VENCIO A LOS DEFENSORES DE PUEBLA EL 2 DE ABRIL DE 1867*. The moiré ribbon (30 mm.) shows the Mexican national colors and is worn around the neck.

CROSS FOR QUÉRETARO, 1867. Awarded by decree dated May 10, 1894, to the Mexican survivors who fought against Maximilian at Querétaro. It is a double-pointed, ball-tipped cross of three arms superimposed on a laurel wreath and with a Mexican eagle as the suspension device. The arms are enamelled green, white and red. On the obverse medallion is *VENCIO EN QUÉRETARO EN 1867*, and on the reverse is *LA PATRIA AGRADECIDA*. The watered ribbon (30 mm.) is composed of three equal stripes—green, white and red. There is also a collar and plaque (apparently

not awarded) for the Commander-in-Chief and a plaque for Generals.

CROSS FOR 1861-1867. Awarded the opponents of the French and allied troops during the years of Maximilian's control. It is a gold or silver cross (with double, ball-tipped points) enamelled red, with rays in the angles and superimposed on a green-enamelled laurel wreath. The first class cross bears on the obverse medallion *COMBATIO A LA INTERVENCION FRANCESA Y SUS ALIADOS DESDE 1861 HASTA 1867*, encircled by *PREMIO AL PATRIOTISMO*. On the reverse is *SALVO LA INDEPENDENCIA Y LAS INSTITUCIONES REPUBLICANAS* encircled by *DISTINTIVO DE CONSTANCIA Y VALOR*. The watered ribbon (20 mm.) is white with red edges, 4 mm. The second class cross bears on the obverse medallion *COOPERO A LA DEFENSA DE LA REPUBLICA CONTRA EL EJERCITO FRANCES*, surrounded by *PREMIO AL PATRIOTISMO* and on the reverse *COMBATIO POR LA INDEPENDENCIA Y LAS INSTITUCIONES REPUBLICANAS* encircled by a band inscribed *DISTINTIVO AL VALOR*. The white, watered ribbon (20 x 30 mm.) has a diagonal red stripe, 5 mm. wide, running from the lower left to the upper right corners. The bronze cross for the troops is not enamelled and bears the same inscription as the first class cross.

MEDAL FOR DISTINGUISHED SERVICES.

A gold, silver or bronze medal 30 mm. in diameter. On the obverse, within a laurel wreath, *PREMIO POR ACCION DISTINGUIDA* and *1^A CLASE*, *2^A CLASE* or *3^A CLASE*, according to the award. The watered ribbon (25 mm.) is red. The medals of the first class (only) have the Mexican eagle as the suspension device. There are three classes and the respective medals are gold, silver and bronze; all are to be worn suspended from the neck.

MEDAL FOR BRAVERY AT SEA. This medal, 38 mm. in diameter, is of gold or silver and has on the obverse the Mexican eagle standing on two crossed anchors and laurel branches. On the reverse is *PREMIO AL VALOR MARINERO* and a diagonal laurel branch across the field. The moiré ribbon, 27 mm., shows the national colors.

DECORATIONS AWARDED BY MAXIMILIAN

During the reign of Maximilian the following regulations* were issued from the castle of Chapultepec, Mexico, on April 10, 1865. These would seem to indicate the order of precedence for the wearing of the several decorations and medals of his time.—

“Of the distribution of decorations and medals on national holidays”

Orden Imperial de San Carlos,
Orden Imperial del Aguila Mexicana.
Orden Imperial de Guadalupe.
Medalla de oro de mérito civil.
Medalla de plata de mérito civil.
Medalla de bronce de mérito civil.
Medalla de oro de mérito militar.
Medalla de plata de mérito militar.
Medalla de bronce de mérito militar.

ORDER OF SAINT CHARLES. This order was instituted by Maximilian on April 10, 1865, as an honorary distinction awarded to women for acts of charity and civil merit. It was dedicated to that sixteenth century saint and cardinal of the Roman Catholic Church, Saint Charles de Borromeo, whose motto, “Humilitas,” appears on the obverse of the cross. It was awarded by the Empress

* From *Reglamento para servicios de honor y ceremonial de Corte. Mexico 1866.*

Charlotte and consisted of two classes. The decoration is a white-enamelled Latin cross with floreated ends and silver edges. A green-enamelled Latin cross, inscribed on the obverse *HUMILITAS*, and on the reverse *SAN CARLOS*, is superimposed. Gritzner* is authority for the information that the Grand or First Class Cross was worn with a red ribbon 68 mm. wide, which hung from over the right shoulder and ended in a large bow knot at the left hip. The cross was attached to this knot. The Second Class Cross was suspended from a red ribbon 38 mm. wide, in the form of a bow knot at the left shoulder.

This, with other orders founded by Maximilian, ceased to exist after the change of government which followed his execution.

THE ORDER OF THE MEXICAN EAGLE.

This was instituted January 1, 1865, by the Emperor Maximilian I, for civil merit. There were six classes, the first of gold and the sixth of silver. The decoration is an eagle with raised wings standing on a green enamelled branch of the nopal plant, holding the head of the serpent of discord in its beak. Crossed on the eagle's breast are a sceptre and a sword. The suspension device is an imperial crown. The watered ribbon (38.5 mm.) is green with red edges 6.5 mm. wide.†

**Handbuch der Ritter- und Verdienstorden* . . . , p. 245.

† General Falls had in his collection a ribbon 37 mm. in width and with edges 8 mm. wide. The specimen in the American Numismatic Society's collection (fourth class, officer) displays a rosette.

MAXIMILIAN'S DECORATION FOR MERIT. Created October 14, 1863, for civil and military merit. Some authorities give the date as March 10, 1865. There were three classes, the first a gold cross, the second a silver medal and the third a bronze medal. The cross is of white enamel and, if awarded for military merit, is surmounted by trophies of arms. On the obverse is *IMPERIO MEXICANO 1863*. On the reverse is the Mexican eagle and the words *AL MERITO CIVIL* or *AL MERITO MILITAR*, according to the award. The second and third class medals have on the obverse the head of the Emperor facing to the right and the legend *MAXIMILIANO EMPERADOR*. The reverse shows the inscription *AL MERITO CIVIL* or *AL MERITO MILITAR*, according to the award, within a laurel wreath. General Falls, in his notes on medal ribbons, shows the first class as bright red, watered, 37 mm. wide; the second class as bright red moiré (38 mm.) with white side stripes (5 mm.) placed 4 mm. from the edges. The third class watered ribbon (37 mm.) is composed of three equal stripes, green, red and white. A second class medal for military merit in the American Numismatic Society collection has a red ribbon 30 mm. wide with white side stripes 5.5 mm., 3 mm. from the edges. These medals are found in various sizes, 33, 34, 37, or 39 mm. in diameter. Some were designed by S. C. Navalon, others by E. Falot, while those by Charles Trotin and René Stern show the Emperor's head facing to the left. Variations

in the lettering may also be noticed. Wahlen illustrates a gold medal for military merit and states that the medal for civil merit is suspended from a green ribbon.

STAR OF MILITARY MERIT. The decoration for officers is of gold and that for the troops is of bronze. The officers' decoration is a gold star of five arms enamelled red with rays in the angles. On the obverse center is *MERITO MILITAR 1^a, 2^a or 3^a*, according to class. On the reverse is *1902*, the year of its creation. The star of the first class is suspended from a gold cord worn around the neck. The plaque of the first class is similar in form to the obverse of the cross. The stars for the second and third classes are worn on the left breast, suspended from a red moiré ribbon, 35 mm. wide and 30 mm. long, and have a plain gold brooch and suspension bar. The star for troops is oxidized bronze, similar to the above but without enamel, and worn with the same red ribbon and in the same manner as the officers' second and third class stars.

CROSS FOR PENSIONERS. This was established in 1911 and consists of a gold cross of four arms enamelled white with green lines around edges bearing on the center obverse medallion *HEROICIDAD* and on the reverse *PERICIA* and the date of retiring. The watered ribbon, 30 mm., is composed of nine equal stripes—five red and four white.

CROSS FOR HEROIC VALOR. Founded March 15, 1926, of three classes, it consists of a red-enamelled square, edged with gold, and suspended diagonally. Superimposed upon this is a gold cross of rays, bearing in the center a white-enamelled band inscribed *VALOR-HEROICA*. Within this is a red-enamelled field bearing in letters of gold 1^a, 2^a or 3^a, according to the grade of the award. The plain reverse bears the inscription, in relief, *CREADA POR LEY DE II DE MZO DE 1926*. The watered ribbons for the three classes are 25 mm. x 25 mm. They are attached at the bottom to a plain, narrow gold suspension bar and at the top to a similar brooch. The first class ribbon is red, the second is of three red and two white equal stripes, and the third is white with red edges 5 mm. wide.

CROSS FOR FIDELITY. This was created March 15, 1926, and consists of four classes. The decoration is a double-pointed cross of four arms superimposed on a gold laurel wreath and surmounted by the national eagle. The arms are rimmed by a double line of enamel and in the center gold medallion are the figures 35, 30, 25 or 20, representing the years of service. Around this on a white-enamelled band is *PERSEVERANCIA* 1^a CLASE, 2^a, 3^a or 4^a class. The first class is enamelled blue, the second red, the third green and the fourth white. On the reverse is *CREADA POR LEY DE II MARZO 1926*. The ribbons (30 mm.)

are: First class, white with the national colors diagonally in the upper left-hand corner (width of stripes 5 mm.); second class, three equal stripes of green, white and red; third class, the narrow red middle stripe is flanked by equal stripes of white and green; fourth class, white with left edge green (5 mm.) and the right, red (5 mm.).

DECORATION FOR NAVAL MERIT. This was founded March 11, 1926, and has two classes. It consists of a gold star of eight points composed of rays, on which is superimposed a silver laurel wreath and an anchor, with a blue band inscribed *MERITO NAVAL*. A gold national eagle serves as the suspension device. On the reverse in relief are the words *CREADA POR LEY DE II DE MZO DE 1926*. The second class decoration is of silver with the wreath and anchor in gold. The first class ribbon (30 mm.) is blue, edged with white, 5.5 mm., and the second class is white with two blue stripes (7.5 mm.) 5 mm. from edges.

DECORATION FOR TECHNICAL MILITARY MERIT. This was created March 11, 1926, of two classes; the first for Mexicans only, and the second for natives or foreigners who had assisted in the development of the army or navy. The decoration, of gold for the first class (of silver for the second class) is an eight-pointed star of rays with the national eagle as the suspension device. Superimposed is a laurel wreath within which is a red-enamelled circle bearing a gold star and encircled

by a white band inscribed *MERITO TECNICO MILITAR*. On the reverse, in relief, is *CREADA POR LEY DE II DE MZO DE 1926*. The watered ribbon for the first class, 30 mm., is green with white edges, 5 mm., and that for the second class, also 30 mm., is composed of five equal stripes, three white and two green. Plain narrow gold or gilt brooch.

DECORATION FOR MERIT IN AIR SERVICE. This decoration has three classes, gold, silver and bronze, and is awarded for special service in the air force of the Republic. It is a six-pointed star with rays in the angles and with its tips superimposed on a laurel wreath. (Greatest diameter 34 mm.—inner medallion 17 mm.) The suspension device is the Mexican eagle. In the enamelled medallion is the propeller of an airplane, encircled by a band inscribed *1ª CLASE AERONAUTICO* and on the reverse is *CREADA POR DECRETO DE 29 DE OCTUBRE DE 1929*. The enamelling of the bands on the obverse varies with the class. The first is red, the second white and the third unenamelled bronze. The first class ribbon is mulberry-red, the second class is the same with the addition of a white center stripe 4 mm. wide, while the third class is mulberry with white edges 4 mm. The ribbons are 29 mm. wide and 70 mm. long.

STATE ISSUES

Following the French intervention and the downfall of Maximilian's five-year reign, several of the states of Mexico authorized medals for their citizen soldiers who had opposed Maximilian and assisted in driving the French from Mexican territory.

MEDAL FOR GUERRERO. Created by decree of October 13, 1869. This medal, 38 mm. in diameter, was of gold or silver, with an eagle as the suspension device, and was inscribed on the obverse *COMBATIO A LA INTERVENCION Y AL LLAMADO IMPERIO*, around which was a laurel wreath. On the reverse within a wreath is *EL ESTADO DE GUERRERO A SUS VALIENTES HIJOS*. The moiré ribbon, 24 mm., shows the Mexican colors—green, white and red in equal stripes, and is worn around the neck.

MEDAL FOR CHIALPA. This was authorized by the state of Guerrero for the action at Chialpa in November, 1864. It is identical with the above medal for the intervention, save that the obverse inscription is *VENCIO A LOS TRAIADORES Y SUS ALIADOS EL 10 DE NOVIEMBRE DE 1864*. The ribbon is the same as for the preceding medal.

MEDAL OF MICHOACAN. Created by decree of April 20, 1868. This is an elaborate enamelled decoration, consisting of two crossed Mexican flags,

above which is an eagle within a green laurel wreath; above this is a band inscribed *MICHOACAN* and another band with *AL PATRIOTISMO Y LA CONSTANCIA*. The moiré ribbon is bright red, 16 mm.

MEDAL OF JALISCO. Created by decrees of February 14, 1873, and January 27, 1890. (For the battle of Mojonera.) This medal, 33 mm. in diameter, was of gold, silver or bronze, bearing on the obverse the head of a man facing right, and on the reverse the inscription *EL ESTADO DE JALISCO A LOS DEFENSORES DE LA SOCIEDAD EN ENERO DE 1873*. The medal is suspended from a laurel wreath. The ribbon (20 mm.) is half white and half red.

MEDAL OF OAXACA. Created by decree of January 11, 1868. This medal, of gold or silver, 30 mm. in diameter, bears on the obverse within a laurel wreath *DEFENDIO LA INDEPENDENCIA NACIONAL OAXACA*. On the reverse, within a laurel wreath, is *VENCIENDO AL ENEMIGO EXTRANJERO Y AL TRAIADOR A SU PATRIA*. The ribbon is a rosette (26 mm. in diameter) of the national colors—green in the center. The medal was awarded to the coal miners of Soyaltepec, Juchitan and Miahuatlan.

PUEBLA MEDAL FOR APRIL, 1867.* Created by decree of May 7, 1869. This is a silver medal,

* *Heraldica Militar* plate 6, No. 9, mistakenly illustrates this medal with the date 1862.

25 mm. in diameter, inscribed on the obverse *EL ESTADO DE PUEBLA AL VALOR MILITAR*, within a laurel wreath, and on the reverse *ASALTO LA PLAZA DE PUEBLA VENCiendo A LOS TRAIADORES A LA PATRIA 2 DE ABRIL DE 1867*. The ribbon (25 mm. wide) is red with a diagonal white stripe 5 mm. broad from the lower left to the upper right corners.

PUEBLA MEDAL FOR 1861-1867. Created by decree of May 7, 1869. This medal is 25 mm. in diameter, of gold, silver or bronze, having on the obverse within a laurel wreath *COMBATIO POR LA INDEPENDENCIA DE SU PATRIA*, and on the reverse *EL ESTADO DE PUEBLA PREMIA EL VALOR Y LA CONSTANCIA*. The ribbon (25 mm.) is half-green, half-red, with a diagonal white stripe, 5 mm., from the lower left to the upper right corners. A slotted bar surmounted by the Mexican eagle serves as a brooch.

MEDAL OF SINALOA. Created by decree of May 4, 1885. This medal was of gold, silver or bronze, 35 mm. in diameter, and has on the obverse the Mexican eagle within a laurel wreath encircled by a band inscribed *EL ESTADO DE SINALOA A SUS DEFENSORES * CONTRA LA INTERVENCION FRANCESA **. The reverse center is inscribed *PREMIO AL PATRIOTISMO*, encircled by *NOVIEMBRE 13 DE 1864 * A NOVIEMBRE 13 DE 1866*. The ribbon, 25 mm., has five equal stripes of green, white, red, white and green.

CROSS FOR SAN PEDRO. Created by decree of February 20, 1892. This cross also was authorized by the state of Sinaloa, and is of gold or silver. On the uppermost arm is *EL ESTADO DE SINALOA*. In the center is a radiant sun (human face) encircled by a band inscribed *A LOS HERIICOS VENCEDORES DE *SAN PEDRO** and on the reverse center is *DICIEMBRE 22 DE 1864* encircled by **PREMIO* AL VALOR Y PATRIOTISMO*. The ribbon is similar to that on the above medal.

MEDAL OF TLAXCALA. Created by decree of May 2, 1868. Of gold, silver and bronze-gilt, 25 mm. in diameter, this medal bears on its obverse, within a laurel wreath, *CONCURRIO AL GLORIOSO ASALTO DE PUEBLA EL 2 DE ABRIL DE 1867*, and on the reverse *EL ESTADO DE TLAXCALA A SUS VALIENTES SOLDADOS*. The watered ribbon (24 mm.) shows the national colors.

CROSS FOR TAMAULIPAS. Created by decree of October 22, 1891. This decoration is in the form of a cross with the red-enamelled ends of the four arms shaped like the letter V. Two laurel branches connect each pair of arms. The Mexican eagle with spread wings serves as a suspension device. On the large center medallion is a red radiate liberty cap, encircled by *COMBATIO CONTRA LA INTERVENCION FRANCESA EN EL ESTADO DE TAMAULIPAS*. On the reverse is *CONCURRIO A LA BATALLA DE STA.*

GERTRUDIS EL 16 DE JUNIO DE 1866. The first class cross is suspended from a ribbon divided diagonally into two parts; the lower and right hand section is white, the upper left section is composed of a corner stripe of green, middle stripe of white, and a lower stripe of red, edged with gold. The silver cross for officers is a green-enamelled cross of four pointed, ball-tipped arms, with flames in the angles, and with the suspension device like that for the first class, but of silver. In the white center medallion is the same inscription (but without the device) encircled by a red band inscribed as for the first class. The reverse, too, is similar. The second class ribbon is similar to that for the first class except that the stripes of the national colors are equal in width and the narrow edge stripe is white. It is slightly shorter in length. For the soldiers (third class) an oval bronze medal 30 x 25 mm., surmounted by an eagle, was issued; it bears similar inscriptions—the one for the obverse has a palm branch to left and one of laurel to the right. The third class ribbon is similar to that of the second class but it hangs from a square suspension bar.

MEDAL OF VERA CRUZ, 1861–1867. Created by decree of March 14, 1868. This is a silver oval medal, 23 x 16 mm., having on the obverse within a laurel wreath *EL ESTADO DE VERA CRUZ AL PATRIOTA VALIENTE* and on the reverse *COMBATIO SIN DESCANSO CONTRA LOS*

ENEMIGOS DE SU PATRIA. The ribbon (13 mm.) displays the national colors.

MEDAL FOR TRES CASTILLOS, 1880. During the first presidency of Porfirio Diaz, opposition which was soon suppressed arose in the state of Chihuahua. For the government forces taking part, gold and silver medals, 35 mm. in diameter, were issued. They bear on the obverse within a laurel wreath *EL ESTADO DE CHIHUAHUA PREMIA EL VALOR DE SUS HIJOS*, and on the reverse, within a wreath, *CAMPANA CONTRA LOS BARBAROS TRES CASTILLOS 14 Y 15 DE OBRE DE 1880*. The ribbon (19 mm.) is half white and half red, and is worn around the neck.

MEDAL OF SONORA, 1885-1886. Created by decree of December 13, 1887.* During the second presidency of Porfirio Diaz, local insurrection broke out among the Yaquis and the Mayas. To reward the troops taking part in the suppression of the trouble, the state of Sonora awarded a silver medal, 40 mm. in diameter, having on the obverse the national eagle encircled by *PREMIO A LA CONSTANCIA Y AL VALOR *ESTADO DE SONORA**. On the reverse within an oak and laurel wreath is *GUERRA DEL YAQUI Y DEL MAYO*

* "*Noticia General*" of recipients of decorations, published 1899 by the Secretaria de Guerra y Marina, Mexico, p. 98, gives the date as 1867, which is undoubtedly incorrect as the period for which the medal was awarded was 1885-1886.

1885 1886. The moiré ribbon, 21 mm., is white with red edges 4.5 mm. wide.

YAQUI CAMPAIGN CROSS. This decoration of the state of Sonora is a red-enamelled Maltese cross, having silver borders and measuring 36 x 36 mm. The obverse white-enamelled center medallion is inscribed *CAMPAÑA DEL YAQUI* and is encircled by a green-enamelled band. The reverse medallion, also white-enamelled, bears the dates *1899 A 1910*. The cross is suspended from a green-enamelled, silver-bordered bar inscribed, in silver, *SONORA*, and the watered ribbon, 25 mm., is white with the left edge green and the right red, each 6 mm. wide.

YUCATAN MEDAL, 1902. The Salbach catalogue (No. 3913) describes this as a blue and white enamelled cross having on the obverse white center *PREMIO DEL ESTADO DE YUCATAN 1902* and on the reverse *CAMPANA CONTRA LOS MAYAS*. The ribbon is blue.

BIBLIOGRAPHY

This list comprises works consulted for data. The citations throughout the text employ in the majority of cases the author's name only, with additional indication when there is more than a single title by one author.

FONROBERT, JULES. *Die Jules Fonrobert'sche Sammlung überseeischer Münzen und Medaillen*; bearb. von Adolph Weyl. Berlin, 1878. Vol. II.

GRITZNER, MAXIMILIAN. *Handbuch der Ritter- und Verdienstorden aller Kulturstaaen der Welt innerhalb des XIX Jahrhunderts*. Leipzig, 1893.

"HERALDICA MILITAR." In *Memoria que el Secretario de Estado y del despacho de Guerra y Marina gral. de division Felipe B. Berriozábal presenta al congreso de la unión y comprende de 19 de Marzo de 1896 á 30 de Junio de 1899*. Atlas. 6 pls. Mexico, 1901.

MEXICO. *Ley de disciplina del ejercito y armada nacionales*. Mexico City, 1926.

MEXICO. *Secretaria de Guerra y Marina. Ordenanza general del ejercito, promulgada por decreto No. 224 de 11 de Diciembre de 1911*.

PADIGLIONE, CARLO. *Motti degli ordini cavalereschi, delle medaglie e croci decorative di tutto il mondo e di tutti i tempi*. Napoli (1907).

PADIGLIONE, CARLO. *Motti delle croci decorative illustrati e tradotti. Con la descrizione dei blasoni che essi accompagnano*. Napoli (1907).

PADIGLIONE, CARLO. *Motti delle medaglie decorative illustrati e tradotti. Con la descrizione dei blasoni che essi accompagnano*. Napoli (1907).

ROSA, ALEJANDRO. *Numismatica; Independencia de América*. Buenos Aires, 1904.

SALBACH SALE. J. Schulman catalogue for auction of Sept. 11, 1911. Amsterdam, 1911.

SCULFORT, V. *Décorations, médailles, monnaies et cachets du Musée de l'Armée*. Paris, 1912.

WAHLEN, AUGUSTE AND ADOLPHE. *Ordres de chevalerie et marques d'honneur*. Bruxelles, 1844-1869.

INDEX

	PAGE
Aculco Medal, 1810-1811.....	4
Acultzingo Medal, 1862.....Pl. VIII	31
Air Service, Decoration for Merit.....	42
Angostura Cross.....Pl. VII	24
Atzacaputzalco Cross.....	10
Battle of May 5, 1862, Medal for.....	31
Bejar Cross, 1842.....	19
Bravery at Sea, Medal for.....	35
Campeche Cross, 1840.....	16
Campeche Cross, 1842.....	18
Campeche Naval Medal, 1843.....	20
Chapultepec Medal, 1847.....	27
Chialpa Medal.....	43
China de Yucatan Cross, 1843.....	20
Churubusco Cross, 1847.....	26
Cordova Star.....Pl. III	9
Cross, July 15, 1840.....	17
Cross of Honor, 1847.....	27
Cross for 1861-1867.....Pls. VIII and IX	34
Distinguished Services, Medal for.....	35
Durango, Zacatecas Medal for, 1821.....	12
Fidelity, Cross for.....	40
Guadalupe, Order of....Front. and Pls. II and XIV	8
Guayamas Cross, 1854.....	29
Guerrero Medal.....	43
Heroic Valor, Cross for.....	40
Independence Cross.....	7
Independence Medal.....Pl. I	5
Jalisco Medal.....	44
Juchi Cross.....	12
La Paz Medal, 1856.....Pl. IX	29
Lipantitlan Cross, 1842.....	18
Matamoros Cross, 1836.....	15
Matamoros Cross, 1851-1852.....	28

	PAGE
Matamoros Medal, 1851-1852.....	28
Maximilian's Decoration for Merit. Pls. XIII and XIV	38
Medical Corps Cross.....	23
Mexican Eagle, Order of..... Pls. XI and XII	37
Michoacan Medal.....	43
Mier Cross, 1842.....	19
Military College Cross.....	17
Military Merit Star..... Pl. XV	39
Military Service Cross..... Pls. V and VI	21
Morelos Cross, 1840.....	18
Naval Medal, Campeche, 1843.....	20
Naval Medal of Merit.....	22
Naval Merit, Decoration for.....	41
Naval Service Cross.....	22
Oaxaca Medal.....	44
Pachuca Medal, 1861.....	30
Pensioners, Cross for.....	39
Puebla Cross, 1867.....	33
Puebla Defenders Medal, 1862.....	32
Puebla Medal, 1833..... Pl. IV	14
Puebla Medal, 1861-1867.....	45
Puebla Medal, April, 1867.....	44
Puebla Siege Cross, 1863.....	32
Queretaro Cross, 1867.....	33
Saint Charles, Order of..... Pl. X	36
Salado Cross, 1842.....	19
San Pedro Cross.....	46
Shields for 1813, etc.....	4
Sinaloa Medal.....	45
Sonora Cross, 1852.....	29
Sonora Medal, 1885-1886..... Pl. XVI	48
Tabasco Cross, 1840.....	16
Tabasco Medal, 1843.....	20
Tamaulipas Cross.....	46
Tampico Medal, 1821.....	11
Tampico, Zacatecas Medal for, 1829..... Pl. IV	13
Technical Military Merit, Decoration for.....	41

DECORATIONS OF HONOUR 53

	PAGE
Tekax Cross, 1857	30
Tepeaca Cross, 1821.....	10
Texas Cross, 1836.....	14
Tiskokob Cross, 1843.....	19
Tlaxcala Medal.....	46
Toluca Cross.....	11
Tres Castillos Medal, 1880.....	48
Ulua Cross, 1825.....	13
Ulua Cross, 1838.....	15
Ulua Medal, 1838.....	15
United States War Cross.....	23
United States War Medal.....	24
Vera Cruz Cross, 1822.....	13
Vera Cruz Cross, 1860.....	30
Vera Cruz Medal, 1838.....	16
Vera Cruz Medal, 1847.....	25
Vera Cruz Medal, 1861-1867.....	47
Yaqui Campaign Cross..... Pl. XVI	49
Yucatan, 1847-1850.....	27
Yucatan Medal, 1902..... Pl. XVII	49
Zacatecas Medal for Durango, 1821.....	12
Zacatecas Medal for Tampico, 1829..... Pl. IV	13

PLATES

MEXICAN DECORATIONS

PL. I



Obverse



Reverse

Independence Medal—First Epoch—Silver



Obverse



Reverse

Independence Medal—Second Epoch—Bronze



Order of Guadalupe—Commander's Cross

MEXICAN DECORATIONS

PL. III



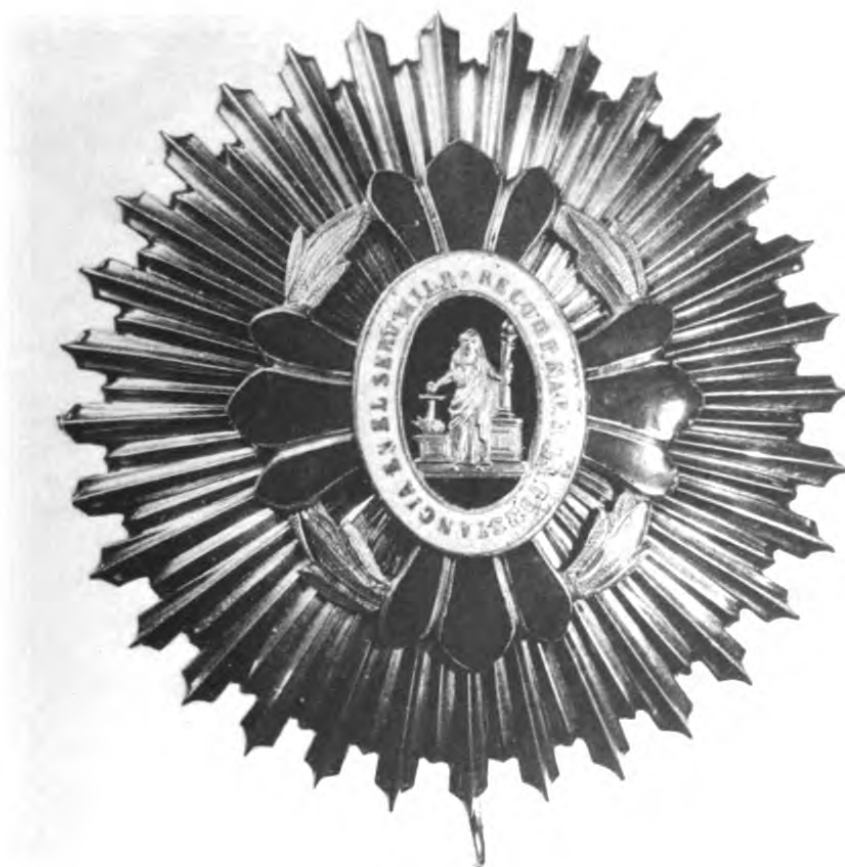
Cordova



Tampico
1829



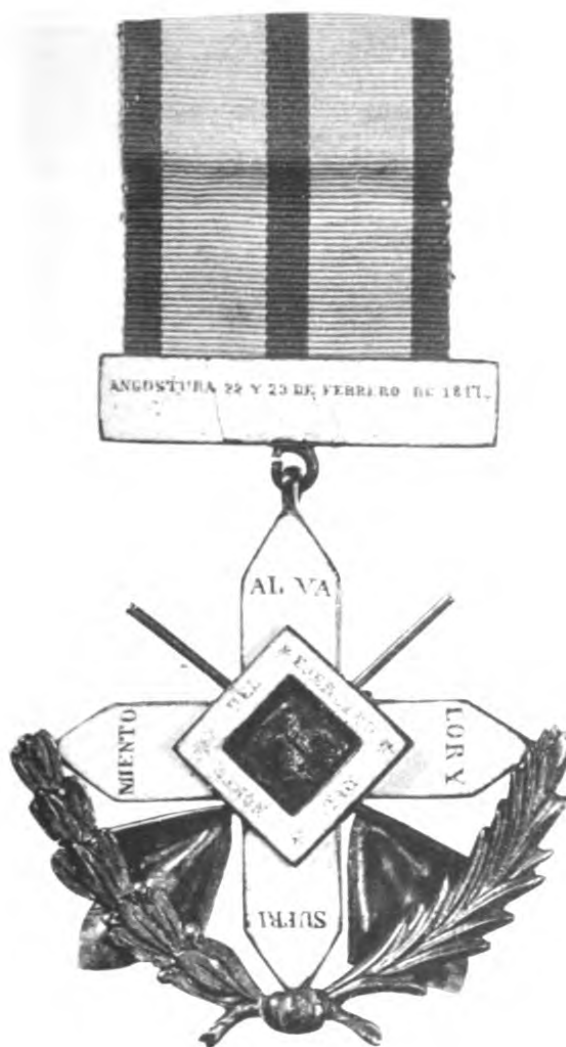
Puebla
1833



Military Service Decoration
First Class Plaque



Military Service Decoration
First Class Badge



Angostura 1847



Acultzingo 1862



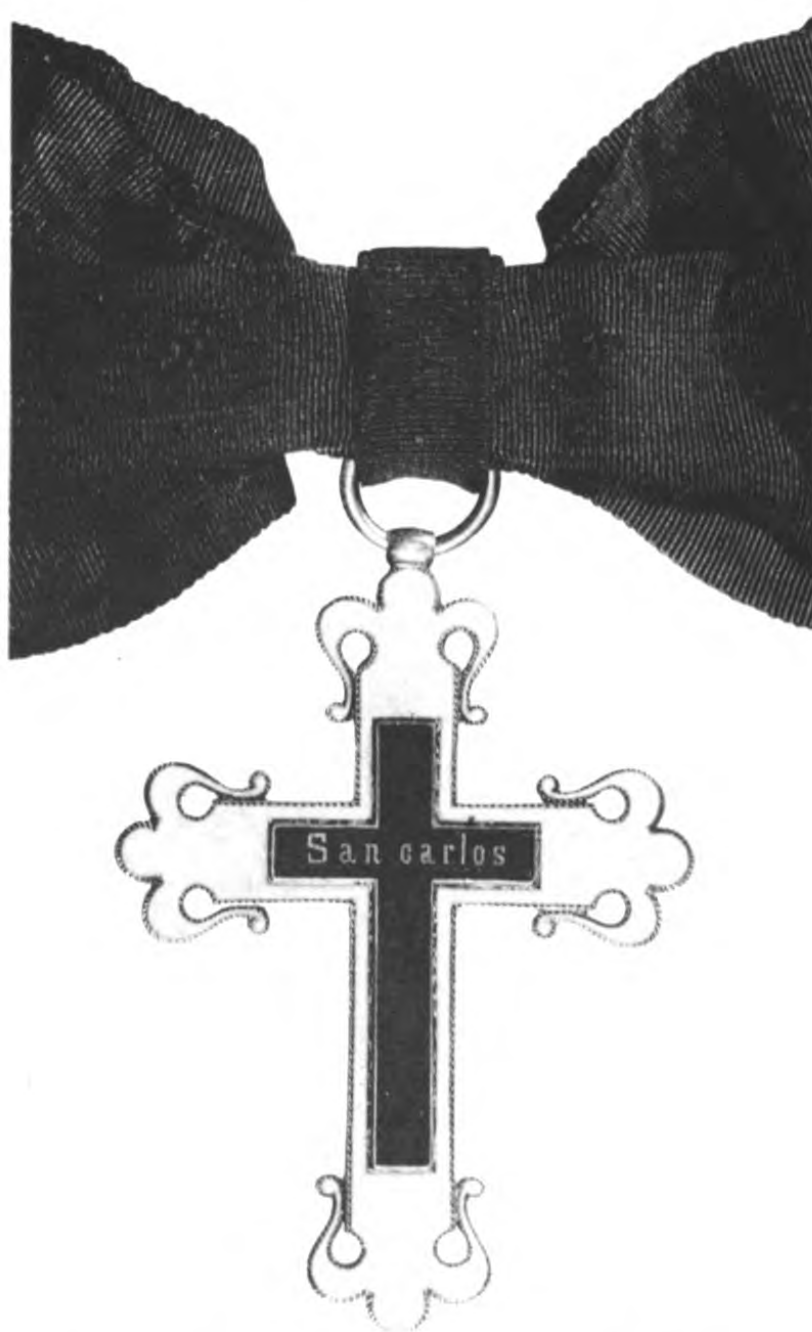
Left:
1861-1867 Cross
Second Class
For Officers



Lapaz 1856

Right:
1861-1867 Cross
First Class
For Troops

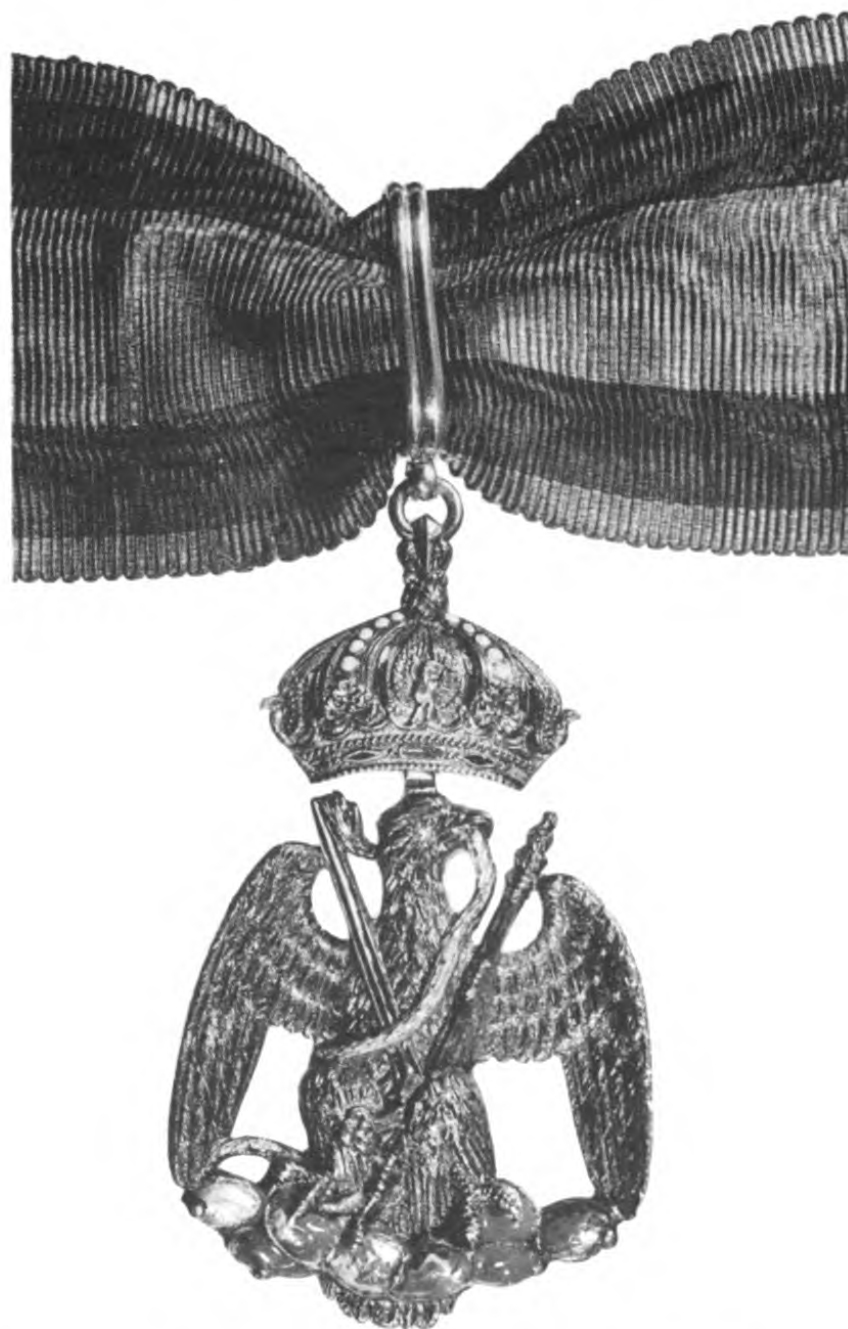




Order of Saint Charles—Grand Cross



Order of the Mexican Eagle—Grand Cross
Plaque



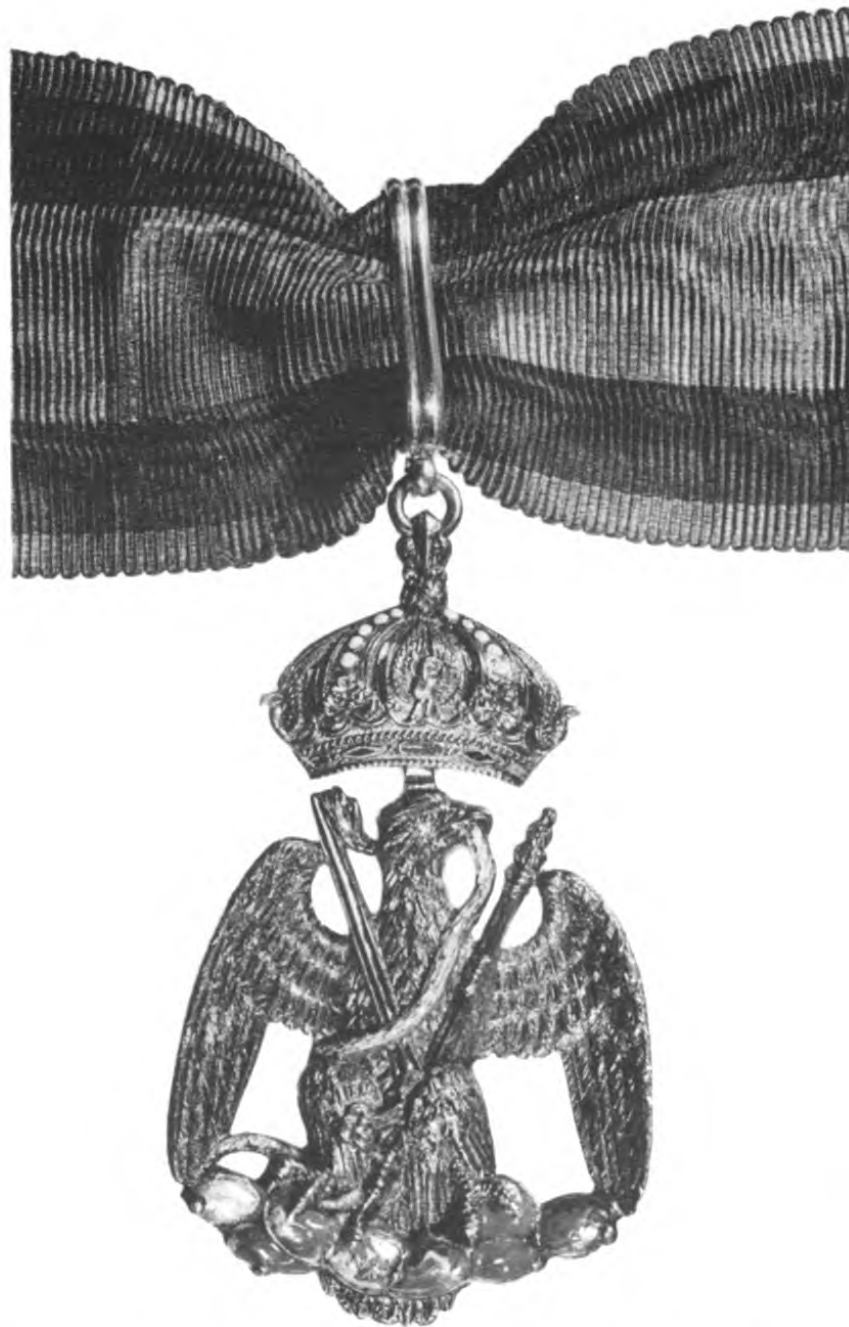
Order of the Mexican Eagle—Commander's Badge



Maximilian
Medal for Military Merit Guadalupe Medal 1866



Third Class Star for Military Merit



Order of the Mexican Eagle—Commander's Badge



Maximilian—Silver Medal for Military Merit



Maximilian
Medal for Military Merit Guadalupe Medal 1866



Third Class Star for Military Merit



1885-1886
Yaqui and Maya War Medal

SONORA

1899-1910
Yaqui Campaign Cross



Yucatan
Mayan Campaign 1902



Maximilian
Medal for Military Merit Guadalupe Medal 1866



Third Class Star for Military Merit



1885-1886
Yaqui and Maya War Medal

SONORA
1899-1910
Yaqui Campaign Cross



Yucatan
Mayan Campaign 1902

Cg
30
N9

SEP 20 1940

NUMISMATIC NOTES
AND MONOGRAPHS

No. 90



TEMPLES OF ROME
AS COIN TYPES

BY
DONALD F. BROWN

THE AMERICAN NUMISMATIC SOCIETY
BROADWAY AT 156TH STREET
NEW YORK
1940

PUBLICATIONS

The American Journal of Numismatics, 1866-1920.

Monthly, May, 1866-April, 1870.

Quarterly, July, 1870-October, 1912.

Annually, 1913-1920.

With many plates, illustrations, maps and tables. Less than a half-dozen complete sets of the Journal remain on hand. Price on application.

The numbers necessary to complete broken sets may in most cases be obtained. An index to the first fifty volumes has been issued as part of Volume LI. It may be purchased separately for \$3.00.

The American Numismatic Society. Catalogue of the International Exhibition of Contemporary Medals. March, 1910. New and revised edition. New York. 1911. xxxvi, 412 pages, 512 illustrations. \$3.00.

Numismatic Notes and Monographs

9. David Eugene Smith, LL.D. Computing Jetons. 1921. 70 pp. 25 pls. \$1.50.
10. Edward T. Newell. The First Seleucid Coinage at Tyre. 1921. 40 pp. 8 pls. \$1.00.
12. Howland Wood. Gold Dollars of 1858. 1922. 7 pp. 2 pls. 50c.
13. R. B. Whitehead. Pre-Mohammedan Coinage of N. W. India. 1922. 56 pp. 15 pls. \$2.00.
14. George F. Hill. Attambelos I of Characene. 1922. 12 pp. 3 pls. \$1.00.
15. M. P. Vlasto. Taras Oikistes (A Contribution to Tarentine Numismatics). 1922. 234 pp. 13 pls. \$3.50.
17. Agnes Baldwin. Six Roman Bronze Medallions. 1923. 39 pp. 6 pls. \$1.50.
18. Howland Wood. Tegucigalpa Coinage of 1823. 1923. 16 pp. 2 pls. 50c.
19. Edward T. Newell. Alexander Hoards—II. Demanhur Hoard. 1923. 162 pp. 8 pls. \$2.50.
20. Harold E. Gillingham. Italian Orders of Chivalry and Medals of Honour. 146 pp. 34 pls. \$2.00.
21. Edward T. Newell. Alexander Hoards—III. Andritsaena. 1924. 39 pp. 6 pls. \$1.00.
22. C. T. Seltman. A Hoard from Side. 1924. 20 pp. 3 pls. \$1.00.

NUMISMATIC
NOTES AND MONOGRAPHS
NUMBER 90

NUMISMATIC NOTES AND MONOGRAPHS
is devoted to essays and treatises on subjects
relating to coins, paper money, medals and
decorations and is uniform with Hispanic
Notes and Monographs published by the
Hispanic Society of America, and with In-
dian Notes and Monographs issued by the
Museum of the American Indian—Heye
Foundation.

PUBLICATION COMMITTEE

AGNES BALDWIN BRETT, *Chairman*

STEPHEN H. P. PELL

THOMAS O. MABBOTT

EDITORIAL STAFF

SYDNEY PHILIP NOE, *Editor*

SAWYER MCA. MOSSER, *Associate Editor*

TEMPLES OF ROME AS COIN TYPES

BY

DONALD F. BROWN



THE AMERICAN NUMISMATIC SOCIETY
BROADWAY AT 156TH STREET
NEW YORK
1940

**COPYRIGHT 1940 BY
THE AMERICAN NUMISMATIC SOCIETY**

THE MERRYMOUNT PRESS, BOSTON, U. S. A.

TEMPLES OF ROME AS COIN TYPES

BY DONALD F. BROWN

∴

NOTE

THE purpose of this monograph is to present the general conclusions of an investigation of the representations of the temples of the city of Rome upon coins of consular and imperial mintage, together with reproductions of the basic types encountered. All the conclusions which are voiced in the discussion are applicable only to this type of representation. The various problems which are to be met in the study of architectural representations on ancient coins are being studied by a group of research workers under the direction of Dr. Lehmann-Hartleben of the New York University Institute of Fine Arts, and with the invaluable help and cooperation of the staff of the American Numismatic Society. The intention is to publish a critical *Corpus* of the whole material in a number of volumes. In the course of gathering and studying the material both for my own researches and for those of others working on the problems involved, I am especially indebted to the above mentioned gentlemen, as well as to Dr. Georg Galster of Copenhagen, to Mr. Harold Mattingly of the British Museum, to Dr. Karl Pink of Vienna, to

Dr. J. Liegle of Berlin, to M. Jean Babelon of the Bibliothèque Nationale, and to many private collectors both in America and abroad.

For the sake of convenience, the names of the divinities to whom temples are dedicated are italicized. In Appendix A a single reference to a standard numismatic publication for each type has been deemed sufficient. No attempt is made to enter into the question of die-varieties which is being worked out for the *Corpus* edition. Whenever possible, I have avoided giving footnotes on topographical questions and refer the interested reader to Platner and Ashby, *Topographical Dictionary of Ancient Rome*, London, 1929, for references to all identified buildings with the exception of *Juno Martialis*, which is omitted in that publication.

TEMPLES OF ROME AS COIN TYPES

THE serious use of coins as a means to facilitate the study of ancient architecture started with T. J. Donaldson's *Architectura Numismatica*, published in 1859. A casual selection of types was discussed, but the book today has little value beyond that of curiosity. A similar selection of types was used by H. Jordan in his monumental *Topographie der Stadt Rom*, 1885, and in his monograph on the temple of *Vesta* which appeared in 1886. Furtwängler and others at the same time were using coins as very minor aids to scholarship. No really scholarly numismatic-architectural studies appeared until the publications of H. Dressel at the turn of the century, which included researches upon the *ludi saeculares* series of Domitian,¹ the temple of *Vesta*,² the temple of *Venus Cloacina*,³ the temple of *Divā Matidia*,⁴ and the temple of *Isis Campensis*.⁵ Herein the first attempt was made to collect die-varieties and to evaluate the information to be found upon coins as far as the actual buildings were concerned. Once the direction in which research might go had been pointed out, numerous other

¹ *Ephemeris Epigraphica*, 1899, pp. 250–251 and 310–315.

² *Zeitschrift für Numismatik*, 1900, pp. 20–31.

³ *Wiener Studien*, 1902, Jahrg. xxiv, Heft 2, pp. 418ff.

⁴ *Corolla Numismatica*, 1906, pp. 16–28.

⁵ *Berlin Akad. Sitzb.*, 1909, pp. 640–648.

scholars followed Dressel's lead. W. Weber studied the coin types showing the temples of *Mercury* and of *Isis Campensis*.⁶ Katherine Esdaille published a small article on the temple of *Magna Mater* in Rome.⁷ O. L. Richmond wrote about the temples of *Concord* and *Apollo Palatine*.⁸ More recently, in works too numerous to list here, the value of the architectural representations upon coins has been increasingly appreciated. General studies of *architectura numismatica* have more or less cleared the field for more detailed and specialized studies.⁹ In none of these publications, however, is there a very detailed discussion of methods of approach to the whole study of architectural representations.

The main body of the following discussion consists of the broader results only of a research problem which has occupied some five years of study. During this time all available publications of Roman coins have been

⁶ *Sitzb. Heidel. Akad.*, 1910, Jahrg. 7.

⁷ *Röm. Mitth.*, 1908, pp. 368-374.

⁸ *Essays and Studies presented to Wm. Ridgeway*, 1913, pp. 198-212.

⁹ E. Babelon, "The Study of Ancient Monuments aided by Numismatics," *American Journal of Numismatics*, vol. XXXIV, 1899-1900, p. 83.

J. Liegle, "Architekturbilder auf antiken Münzen," *Die Antike*, 1936, pp. 202-228.

K. Regling, "Die Münzen als Hilfsmittel der archäologischen Forschung," *Handbuch der Archäologie*, 1937, pp. 134-144.

M. Bernhart, "Die Denkmäler des Forums auf Römischen Münzen," *Deutsches Jahrbuch für Numismatik*, 1938, pp. 136-152.

combed for references and reproductions. The major collections of Europe and America have been canvassed for material—an undertaking which the present conflict has unfortunately greatly hindered. Altogether over 2000 pertinent coins have been examined and listed. Since a certain amount of significant variation was found to exist between different dies of the same issues, it was decided to collect all the available die-varieties for each issue. This work is still under way, and it is hoped that the resultant *Corpus* will some day be published along with the reasoned arguments which have led to the results which follow.

The types chosen for this study have been only those for which some reason could be advanced to assume that the structure represented was in the city of Rome.¹⁰ The minting place of the pieces helped considerably in arriving at such a conclusion, since it was considered reasonable to claim that the mint in the city of Rome would seldom strike coins showing extra-city temples, and conversely that mints outside of Rome would have little reason to commemorate temples in the city of Rome upon their coins. Contradictions of the latter statement are found, but in very limited number, and only from mints which were parts of the imperial system.¹¹

¹⁰ Appendix A contains a chronological list of the types encountered, with a single reference for each to an illustration. It would not be practical to list here all the published references to each type.

¹¹ Those found only in provincial mints are: the temple of

As an example of coin types showing provincial temples, although minted in Rome, only one need be cited to establish the category, i.e., the temple of *Venus Erycina* in Sicily (B.M.C.R. Pl. XLVII, 21). This type and others like it will be discussed in projected studies of the various geographical divisions of the Empire.

When there is no inscription on the coin to aid in the identification of the building shown, it is necessary to refer to the ancient literary sources and to endeavor to

Divus Julius (Pl. I, 7) struck in Africa (B.M.C.R. Aug. 32); of *Jupiter Tonans* (Pl. I, 10) struck in Spain (B.M.C. Aug. 362); of *Mars Ultor* (Pl. I, 6, 11) struck in Spain (B.M.C. Aug. 315), at Ephesus (B.M.C. Aug. 704), and at Alexandria (Poole, *Coinage of Alexandria*, p. 2, No. 7). Those found simultaneously at Rome and in provincial mints are: the temple of *Janus* (Pl. II, 6, 7) struck at Lugdunum (B.M.C. Nero, 319); of *Isis Campensis* (Pl. III, 2) struck in Spain (B.M.C. Vesp. 780); of *Vesta in Foro* (Pl. III, 4) struck in Gaul (B.M.C. Vesp. 372, Titus 411. Cohen, Postumus, 236); of *Jupiter Capitolinus* (B.M.C. II, 68, 3) struck in Asia (B.M.C. Domit. 251—there is some doubt in this instance whether the temple in the city of Rome is intended) and Gaul (B.M.C. Vesp. 850); of *Venus and Rome* (e.g., Pl. IX, 8) struck at Ticinum (Maurice II, 230, vii, 2), Aquileia (Maurice I, 305, iii, 3), Siscia (*Num. Zeit.*, 1916, p. 195), London (Cohen, Max. Herc. 501), Africa (Cohen, Alex. Tyrans, 10). The one mint that appears to have a very definite character of its own is that of Lugdunum, as a comparison between the *Janus* (Pl. II, 6, 7) pieces of Nero struck there and at Rome will show. A very ornate, florid style of representation distinguishes the Gallic types (cf. B.M.C. Nero, 320 and 111). This florid style appears only at Lugdunum, but the plainer Roman style appears at both places.

equate the buildings thus shown with those mentioned in the sources for the emperor or moneyer in question. This method is not a touchstone for solving the problems of all the uninscribed temples, but a few were identified which had not been before.¹² Those which still defy identification with a site or at least a specific divinity appear in the list of Appendix A as “*distyle ‘A’ and ‘B,’*” “*tetrastyle ‘A’ and ‘B,’*” “*hexastyle ‘A’ and ‘B,’*” and “*VOTA.*”

The chronological limits within which Roman temple types appear upon Roman coins are 88 B.C. (*Jupiter*

¹² Those which have been newly allocated to a divinity or site are: all the *Vesta in Palatio* series (Pl. II, 4; III, 3) with the exception of the Tiberius issues which were already identified as such by G. Rizzo in 1933 (*La Base di Augusto*, Naples, 1933, pp. 29–38); the *ludi saeculares* coins of Domitian which show the temples of *Jupiter Capitolinus* and of *Jupiter Tonans* (Pl. III, 5, 6) in the background (already partly distinguished by H. Dressel in *Ephemeris Epigraphica*, loc. cit.); the *Venus Genetrix* series (Pl. IV, 4) of Trajan; the *Genius Senatus* series (Pl. VI, 4) of Antoninus Pius (Cohen has already suggested *Genius Senatus* or *Genius Antonini*; a more positive identification has seemed possible); the *Hercules Victor* medallion (Pl. VI, 6) of Antoninus Pius; the *Apollo Medicus* medallion (Pl. IX, 4) of Quintillus; the entire late series of *Venus and Rome* (Pl. VII, 1; VIII, 4, 5; IX, 1, 3, 5–8) from Caracalla to Alexander Tyrans (in this the theories of J. Gagé are followed as published in the *Revue des Études Latines*, 1935, p. 415ff.). It has also been possible to amplify and improve upon Bigot’s theory (*Bulletino Comunale*, 1911, pp. 80–85) concerning the coin of Elagabalus which shows his temple of the *Sol Invictus* (Pl. VII, 6), and to equate with this building the one which appears upon issues of Alexander Severus as the temple of *Jupiter Ultor* (Pl. VIII, 2).

Capitolinus of the *gens* Volteia) and 311 A.D. (*Venus and Rome* of Alexander Tyrans). During this period, forty-three different temples of Rome are used upon the coins. A study of these as they appear in Appendix A will reveal that architectural representations came into favor in Roman coinage only gradually. In the entire first century B.C., before the reign of Augustus, only eight moneyers use them. With Augustus and in the first century A.D., the tempo quickens. Augustus himself strikes three varieties, Tiberius two, Caligula one, Nero two, Vespasian four, Domitian seven, Titus three. In the second century A.D., Trajan issues five varieties, Hadrian four, Antoninus Pius seven, Marcus Aurelius five. With the third century the incidence of varieties drops off, and most emperors who strike coins with architectural temple types are responsible for only one or two varieties. Many do not strike them at all. The fourth century sees only one variety issued, the *Venus and Rome* temple (cf. Pl. ix, 1, 3, 5-8).¹³ Indeed, from the reign of Septimius Severus onward, the temple of *Venus and Rome* is the only one consistently figured upon coins and medallions. A number of temples are occasionally figured, but limited generally to a single issue of a single emperor.¹⁴ With four exceptions, *Genius Exer-*

¹³ The contorniates of the fourth and fifth centuries which have temple types are obviously copies of earlier issues and are not discussed herein.

¹⁴ These are the temples of *Apollo Medicus* (Quintillus), *Concord* (Severus Alexander and Orbiana), *Fortuna Redux* (Tre-

citius, *Jupiter Sospitator*, *Vesta in Foro* and *Jupiter Ultor*, these occasional types are found only upon medallions and not on coins. The first two and the last of these exceptions are very restricted in use, being confined to issues of single emperors. *Vesta in Foro*, on the other hand, receives a use which approximates that given to *Venus and Rome*, although the disparity in the frequency of occurrence (*Vesta in Foro* occurs on seventeen late issues and *Venus and Rome* on over one hundred) makes any comparison between the usages of these two types of doubtful value. However this may be, these two types are the dominant ones of the late third and early fourth centuries A.D. upon coins of Roman mintage. The type of *Juno Martialis* (Pl. VIII, 1), which achieves a certain popularity under Trebonianus Gallus and Volusian, and appears neither before nor after their reigns, must be regarded as an exception in the otherwise clear picture of numismatic temple iconography of this late period. For some as yet unknown reason, these two emperors felt particularly beholden to this goddess, and struck a considerable number of issues in her honor.

All sorts of structures from a *lararium* (*Minerva*, Pl. IV, 1) to a complex of temples and porticoes (*Diva*

bonianus Gallus and Volusian), *Genius Exercitus* (Carinus), *Hercules Victor* (Maximianus Hercules), *Jupiter Sospitator* (Geta and Caracalla), *Jupiter Ultor* (Alexander Severus), *Sol Invictus* (Elagabalus), *Sol in Circo Maximo* (Caracalla and Philip Sr., Jr., and Otacilia), *Vesta in Foro* (Julia Domna, Caracalla, Etruscilla, Postumus), the *VOTA* temples (Septimius Severus, Trebonianus Gallus, Constantius Chlorus).

Matidia, Pl. v, 3) have been used as models for the various types. Although it is obvious that there must have been some compelling reason for the selection of any one type, it has not been possible to arrive at a blanket rationalization for the various choices. However, the use of most of the types can be explained by some one of the reasons which follow.

The most usual reason appears to have been actual building activity of the moneyer or emperor. In many instances, our sources are too scanty to assign definitely the use of a type to this reason, but it seems to be assured in the majority of instances.¹⁵ Some of these types, as

¹⁵ These are: *Jupiter Capitolinus* (Pl. I, 1) of the gens Volteia; *Vesta in Foro* (Pl. I, 2) of the gens Cassia; *Clementia Caesaris* (Pl. I, 4) of the gens Sepullia; *Jupiter Capitolinus* (Pl. I, 8) of the gens Petillia; *Venus Cloacina* (Pl. I, 9) of the gens Mussidia; *Mars Ultor* (Pl. I, 6, 11) of Augustus; *Jupiter Tonans* (Pl. I, 10) of Augustus; *Concord* (Pl. II, 1) of Tiberius; *Vesta in Palatio* (Pl. II, 4) of Tiberius; *Apollo Palatine* (Pl. II, 2) of Caligula; *Vesta in Foro* (Pl. II, 3) of Nero; *Vesta in Foro* (Pl. III, 4) of the three Flavians; *Jupiter Capitolinus* (Pl. III, 1) of the three Flavians; *Vesta in Palatio* (Pl. III, 3) of the three Flavians; *Sol in Circo Maximo* (Pl. IV, 2) of Trajan; *Venus Genetrix* (Pl. IV, 4) of Trajan; *Divus Nerva* (Pl. IV, 3) of Trajan; *Venus and Rome* (Pl. IV, 5) of Hadrian; *Divia Matidia* (Pl. v, 3) of Hadrian; *Venus and Rome* (Pl. v, 2) of Antoninus Pius; *Divia Faustina* (Pl. v, 4) of Antoninus Pius; *Bacchus* (Pl. VI, 1) of Antoninus Pius; *Divus Augustus* (Pl. VI, 5) of Antoninus Pius; *Mercury* (Pl. VII, 5) of Marcus Aurelius; *Vesta in Foro* (Pl. v, 5) of Julia Domna; *Sol in Circo Maximo* (cf. Pl. IV, 2) of Philip Sr., Jr., and Otacilia; *Sol Invictus* (Pl. VII, 6) of Elagabalus; *Jupiter Ultor* (Pl. VIII, 2) of Alexander Severus, and finally *Venus and Rome* (Pl. IX, 6, 7) of Maxentius.

will be developed later, were chosen for other reasons also. However, definite issues for all of the above can be found, which may be equated with building activity on the particular temple.

Closely connected with this group, chosen because of active building, are the *Neptune* (Pl. 1, 5) coins of the *gens* Domitia and the *Divus Julius* (Pl. 1, 7) coins of Augustus. Considerable discussion has been aroused by both of these issues because their date of emission in each case is earlier than the known dedication date of the temple shown upon the coin. An iconographical peculiarity, hitherto unnoticed, also separates these types from the general run of architectural representations. Both these structures, it is to be noted, and only these in the whole series of temple types, are shown placed upon a rather high podium which has no visible means of access to the floor level. This common peculiarity, coupled with the common trouble found in dating these two issues, makes it obvious that some common fact is being expressed by the iconography of the representations. This fact is that neither structure was built at the time the coins were struck, and the inaccessible podia are meant to indicate that only putative elevations are shown on the coins and not real structures. Therefore, as showing structures projected, even though not yet built, these two coins belong in the group of types chosen because of building activity.

A second reason for the choice of a temple type is the commemoration of some event of extraordinary im-

portance to the Empire. This can be used to explain the use of four types.¹⁶ There may be many other types chosen for this purpose, but our knowledge does not allow us to isolate them. In none of the cases noted does actual building activity appear to have been involved, and for this reason the group seems a valid one, especially since there is an event which explains each issue.

A third reason is the pictorial commemoration of the celebration of religious ceremonies.¹⁷ The group has

¹⁶ *Janus* (Pl. II, 8, 7) of Nero (because the Emperor was so proud of having closed the doors of the Janus temple in Rome which signified that the Empire was at peace); *Isis Campensis* (Pl. VII, 5) of Vespasian (because the Emperor regarded that goddess as his "good luck," and slept in her temple before entering the city of Rome to celebrate his triumph over Judaea—the coins commemorate this latter event); *Fortuna Redux* (Pl. VII, 4) of Marcus Aurelius (because of the Emperor's safe return from a campaign); *Apollo Medicus* (Pl. IX, 4) of Quintillus (because of the Emperor's good health during a plague).

¹⁷ In this group are: *Jupiter Feretrius* (Pl. I, 3) of gens Claudia; *Apollo Palatine* (Pl. II, 2) of Caligula (also seen in the group picked for building activity because Caligula finished the structure); *Jupiter Capitolinus* (Pl. III, 5) of Domitian (the *ludi saeculares* issues); *Jupiter Tonans* (Pl. III, 6) of Domitian (the *ludi saeculares* issues); *Minerva* (Pl. IV, 1) of Domitian; *Silvanus* (Pl. IV, 6) of Hadrian; *Vesta in Foro* (Pl. V, 5) of Faustina Sr.; *Tellus* (Pl. VI, 2) of Marcus Aurelius; *VOTA* (cf. Pl. VII, 7) of Antoninus Pius; *Hercules Victor* (Pl. VI, 6) of Antoninus Pius; *Vesta in Foro* (cf. Pl. V, 5) of Lucilla; *VOTA* (cf. Pl. VII, 7) of Marcus Aurelius; *Vesta in Foro* (cf. Pl. V, 5) of Crispina; *VOTA* (Pl. VII, 7) of Commodus; *Vesta in Foro* (Pl. V, 5) of Julia Domna; *Venus and Rome* (Pl. VII, 1) of Caracalla; *Venus and Rome*

been isolated through the common factor of a religious action going on before the temple.

A fourth reason is the pictorial commemoration of an essentially political event. The *Divus Julius* (Pl. v, 1) series of Hadrian, showing the Emperor addressing citizens from the rostra before the temple, is the single instance which comes under this heading.

It will be observed that a number of types do not fall into any of the above categories, such as, for instance, *Genius Senatus* of Antoninus Pius, *Juno Martialis* of Trebonianus Gallus, etc. Probably if our knowledge of things Roman were more extensive, these too would be found to fit into one of the categories just described.

With a few exceptions, it is possible to check the details of the coin types with literary sources concerning the various buildings and with the actual remains themselves. The agreement of the coin types in all major details with the sources is striking, and the necessary con-

(cf. Pl. VII, 1) of Geta; *VOTA* (cf. Pl. VII, 7) of Septimius Severus; *Vesta in Foro* (cf. Pl. v, 5) of Caracalla; *Concord* (Pl. VIII, 6) of Alexander Severus and Orbiana; *Venus and Rome* (cf. Pl. VIII, 4) of Alexander Severus; *Venus and Rome* (Pl. VIII, 4) of Alexander Severus and Mamaea; *Venus and Rome* (cf. Pl. VIII, 4) of Philip Sr., Jr., and Otacilia; *Venus and Rome* (cf. Pl. VII, 1) of Philip Jr.; *Vesta in Foro* (cf. Pl. v, 5) of Etruscilla; *VOTA* (cf. Pl. VII, 7) of Trebonianus Gallus; *Fortuna Redux* (cf. Pl. VIII, 3) of Trebonianus Gallus, Trebonianus Gallus and Volusian, and Volusian; *Vesta in Foro* (cf. Pl. v, 5) of Postumus; *Venus and Rome* (cf. Pl. IX, 3) of Galerius Maximianus; *Venus and Rome* (cf. Pl. IX, 3) of Constantius Chlorus; *VOTA* (cf. Pl. VII, 7) of Constantius Chlorus.

clusion is that only actual buildings are shown as coin types (with the exception, of course, of the two putative elevations seen on *Divus Julius* of Augustus and *Neptune* of the *gens* Domitia), and these with considerable accuracy of observation. Certain necessary abbreviations are used, but the essential features of the buildings are faithfully reproduced.

In those cases, for instance, where we know that the building shown was round, it is without exception represented as round upon the coins, e.g. *Bacchus* (Pl. vi, 1), the two temples of *Vesta* (Pl. ii, 3, 4; iii, 3, 4; v, 5), and *Mars Ultor* (Pl. i, 6, 11). There appears not to have been a set iconography for round temples, but the number of columns of the peristyle never exceeds six on the numismatic representations, even in those cases where we know that twenty was the actual number in the building. A minimum of two is also found, in which instances the roundness of the building, indicated by the position of the columns on those coins where more than this number appeared, is now shown by the curvature of the steps or by the arrangement of the roof. In other instances, where we are informed concerning the façades and number of columns in the porch of rectangular structures, the coin types generally preserve the actual number of columns and also the shape of the façade in its major details. The temple of *Concord* (Pl. ii, 1) of Tiberius is a splendid example of this adherence to actuality. The façade of this temple was of a peculiar

extended form, which is easily seen to be the case on the coins. The earlier series of Hadrian and Antoninus Pius which show the temple of *Venus and Rome* (Pl. iv, 5; v, 2), the Trajanic *Venus Genetrix* series (Pl. iv, 4), and the Antonine *Diva Faustina* group (Pl. v, 4) are all examples of this same adherence to actuality. This is, however, not a hard and fast rule, and upon both early and late coins the number of columns of a particular building shown may be at variance with what is known about the structure archaeologically. It is, moreover, important to note that, as far as can be ascertained, columns were never added in the coin types above the real number, so that if a type is found showing, for example, a tetrastyle structure, it is certain that the building as it stood had at least four columns on its façade and perhaps more, but certainly no less than four. A good example of this reduction of columns for reasons of space or composition is offered by the late third century A.D. series of coins showing the temple of *Venus and Rome* (a decastyle structure) where the number is reduced on the coins to six usually, but occasionally to eight, four, or even two. As far as the architectural orders of the columns are concerned and the presence or absence of fluting upon the shafts, the numismatic evidence is likely to be unreliable, due to the obvious limitations of the medium. However, generally speaking, some attempt is made to conventionalize the forms of the capitals to a motif recognizably Corinthian, Ionic

or Tuscan. T. J. Donaldson (*op. cit.*, facing p. xvi) has an amusing plate in his book of some varieties of capitals noted by him among coin types.

Another detail which can seldom be implicitly relied upon in the coin types is the number of steps leading up to the pronaos floor level, if the structure is of the podium type. When it is archaeologically certain that steps existed, it has been found that the coins always indicate them, but their number cannot be accepted as evidence. The Antonine coins showing the temple of *Divus Augustus* (Pl. vi, 5), for instance, have steps varying in number from one to six, yet all these coins are approximately of the same date and certainly show the same phase of the building. In one instance, however, the surprising accuracy of observation in regard to the arrangement of an entrance terrace and stairway was of great value in demonstrating the identity between two structures shown on two different issues, i.e., *Sol Invictus* (Pl. vii, 6) of Elagabalus, and *Jupiter Ultor* (Pl. viii, 2) of Alexander Severus.¹⁸ On the other hand, inaccurate, or perhaps stylized drawing has created a considerable obstacle to the identification of the representation of the temple of *Venus Genetrix* (Pl. iv, 4) on certain coins of Trajan. In this latter case, however, the steps may have been added to the front of the *podium* (whereas in actuality they were at the sides and not visible from the front) in order to avoid implying that

¹⁸ *A.J.A.*, 1938, p. 129.

the coin type was a putative elevation only, and not a real structure (see p. 11).

As far as the roofs of the various types of structures encountered on the coins are concerned, no reason has ever been found to doubt the reliability of what is shown. In other words, when it is known that a roof was gabled, it appears so on the coins, when flat, flat and when domed, domed.

Decorative friezes and pedimental tympana can scarcely be expected to be minutely reproduced on the coins. As far as the tympana are concerned, it was deemed sufficient to indicate at most a few standing figures and some angle-filling objects. Even this abridgment was increased, and often a wreath or globe is placed in the tympanum to indicate more elaborate works. The Flavian coins of *Jupiter Capitolinus* (Pl. III, 1, 5) show this convention at work, since both highly circumstantial and highly conventionalized tympana decorations occur. In one instance, the temple of *Concord* (Pl. II, 1) of Tiberius, there is good reason to believe that the pedimental groups of statuary were moved by the die-cutter from the tympanum to the cornice of the roof for reasons of space.

The acroterial sculptures which appear on the numismatic representations are, generally speaking, reliable as evidence of actuality, but even here different dies show different arrangements for the same building, as can be ascertained from a study of those coins showing, for instance, the Antonine temple of *Divus Augustus*

(Pl. VI, 5). It is probable that these changes are due to varying observations by the die-cutters. However, where care has been taken to show plainly sculptured acroterial figures, it may be assumed that such figures once existed upon the roof of the building in question, although their relative positions may not be exactly preserved. This latter proviso does not apply to the decoration found on the apex of the roof, which as far as can be verified is, when shown at all, a faithful reproduction of reality. Very often what must have been elaborate roof decoration is abbreviated by means of some simple geometric form. There seems to have been the same attitude toward these details as toward the number of columns—abbreviation was allowable, but not addition.

The great elaboration of carved detail usual upon Roman cornices and entablatures is never shown upon the coins. It is abbreviated by means of pearled lines, or by some other simple method. This can be observed especially upon the long series of the temple of *Venus and Rome*, where all sorts of combinations of plain lines and curved lines and dotted lines are used for this purpose. Antefixes are occasionally carefully drawn, as for instance on the temple of *Vesta in Foro* (Pl. I, 2) of the *gens* Cassia, but generally they are omitted, or radically abbreviated.

Incidental decoration of a distinctive nature, such as honorific columns and free-standing statues, is generally shown on types preceding the late second century A.D., as the *Concord* (Pl. II, 1) of Tiberius or the *Venus and*

Rome (Pl. iv, 5) of Hadrian shows. The Flavian coins showing the temple of *Vesta in Foro* (Pl. iii, 4) are unique sources for the knowledge that this building once had flanking terraces and statues. In various other instances, coin types serve as evidence for the existence of incidental temple furniture, which ordinarily would not otherwise be suspected. After the late second century A.D., such details tend to be suppressed.

Cult statues, although beyond the scope of a purely architectural investigation, need a word here. They are often shown as standing within the colonnade of a temple whose center columns have been given an exaggerated intercolumniation. That these wide intercolumniations are not records of reality can be demonstrated in almost every instance where the façade of a temple or its foundations have been preserved, e.g. the temple of *Concord* (Pl. ii, 1) of Tiberius and the temple of *Venus Genetrix* (Pl. iv, 4) of Trajan.

In summation, we may say that when Roman coin types show temples in Rome, the actual building was used as a model by the die-cutter. Care was taken to record the essential and distinctive features of the building, so that identification would be easy for a contemporary, if not necessarily so for us. Details are often abbreviated or even eliminated, but are never added. It is only in the very late series showing the temple of *Venus and Rome*, and in those relatively few other instances where temples are used as background for scenes of action, that little reliance can be placed upon the spe-

cific evidence offered by them. But even in this latter group, an effort is made to indicate the salient and distinctive features of the building, e.g. the temple of *Jupiter Capitolinus* (of Domitian's *ludi saeculares* series, Pl. III, 5), of *Vesta in Foro* (of Julia Domna, Pl. v, 5), and of *Concord* (of Alexander Severus and Orbiana, Pl. VIII, 6).

Four main methods of representation can be distinguished among the various types composing the series studied herein. They are: (1) the full-front "simple" type; (2) the full-front "ornate" type; (3) the "vista" type where perspective is used; (4) the "background" type, wherein the temple building serves as the background for a religious or political ceremony. The first category is found throughout the entire period covered by this study. It introduces the architectural temple type in the Volteia coins showing the temple of *Jupiter Capitolinus*, dated 88 B.C. (Pl. I, 1), and it ends the series with the coins of Alexander Tyrans showing the temple of *Venus and Rome*, dated 311 A.D. (cf. Pl. IX, 8). Within this period twenty-two structures are shown in the simple frontal style.¹⁹

¹⁹ These are: *Jupiter Capitolinus* (Pl. I, 1) of the *gens* Volteia; *Vesta in Foro* (Pl. I, 2) of the *gens* Cassia; *Clementia Caesaris* (Pl. I, 4) of the *gens* Sepullia; *Jupiter Capitolinus* (Pl. I, 8) of the *gens* Petillia; *Venus Cloacina* (Pl. I, 9) of the *gens* Mussidia; *Divus Julius* (Pl. I, 7) of Augustus; *Mars Ultor* (Pl. I, 6, 11) of Augustus; *Jupiter Tonans* (Pl. I, 10) of Augustus; *Vesta in Foro* (Pl. II, 3) of Nero; *Vesta in Foro* (cf. Pl. III, 4) of Vespasian; *Vesta in Foro* (Pl. III, 4) of Titus;

It will be noticed that this method of representation embraces the majority of temples in Rome which are shown on coins, twenty-two out of forty-three, and is spread rather evenly throughout the period in which architectural representations are found upon coins. In the first century B.C., it is the most common method,

Vesta in Foro (cf. Pl. III, 4) of Domitian; *Tetrastyle "A"* (*Riv. Ital. Num.*, 1896, Pl. II, 6) of Titus; *Distyle "A"* (B.M.C. II, 66, 16) of Domitian; *Distyle "B"* (B.M.C. II, 77, 9) of Domitian; *Sol in Circo Maximo* (Pl. IV, 2) of Trajan; *Divus Nerva* (Pl. IV, 3) of Trajan (some issues); *Divia Faustina* (Pl. V, 4) of Antoninus Pius (some issues); *Isis* (Pl. VI, 3) of Faustina Jr.; *Genius Senatus* (Pl. VI, 4) of Antoninus Pius; *Fanus* (Pl. VII, 2) of Commodus; *Jupiter Sospitator* (cf. Pl. VII, 3) of Geta; *Jupiter Sospitator* (Pl. VII, 3) of Caracalla; *Venus and Rome* (cf. Pl. VII, 5) of Philip Sr.; *Venus and Rome* (cf. Pl. VIII, 5) of Philip Sr., Jr., and Otacilia; *Venus and Rome* (cf. Pl. VIII, 5) of Philip Jr.; *Venus and Rome* (cf. Pl. VIII, 5) of Etruscilla; *Venus and Rome* (cf. Pl. VIII, 5) of Hostilianus; *Juno Martialis* (cf. Pl. VIII, 1) of Volusian; *Juno Martialis* (Pl. VIII, 1) of Trebonianus Gallus; *Juno Martialis* (cf. Pl. VIII, 1) of Trebonianus Gallus and Volusian; *Venus and Rome* (cf. Pl. VIII, 5) of Volusian; *Venus and Rome* (Pl. VIII, 5) of Trebonianus Gallus; *Venus and Rome* (cf. Pl. VIII, 5) of Postumus; *Apollo Medicus* (Pl. IX, 4) of Quintillus; *Venus and Rome* (Pl. IX, 5) of Probus; *Genius Exercitus* (Pl. IX, 2) of Carinus; *Venus and Rome* (Pl. IX, 1) of Carausius; *Venus and Rome* (cf. Pl. IX, 1) of Allectus; *Venus and Rome* (cf. Pl. IX, 5) of Galerius Maximianus; *Venus and Rome* (cf. Pl. IX, 5) of Constantius Chlorus; *Venus and Rome* (Pl. IX, 3) of Maximianus Hercules; *Venus and Rome* (Pl. IX, 6, 7) of Maxentius; *Venus and Rome* (Pl. IX, 8) of Constantine I; *Venus and Rome* (cf. Pl. IX, 8) of Alexander Tyrans.

since Method 2 appears not at all in that period and as will be developed below only one instance each of the use of Methods 3 and 4 is to be found. Some of the structures listed here will appear again in lists of the other methods, as, for instance, *Jupiter Capitolinus* (Pl. III, 5) of Domitian (the *ludi* series), *Jupiter Tonans* (Pl. III, 6) of Domitian (the *ludi* series), *Divia Faustina* (Pl. v, 4) of Antoninus Pius, and several others. When Method 1 is used, the representation takes up all the available space on the flan, and is characteristically stolid in the Roman portrait sense. In the beginning of the third century A.D., a method of stylization is developed within this category which is never lost. This is a phenomenon observable in other branches of Roman art at the same time, and it is not surprising to find it upon coins too. The best exponent of this trend is the late series of coins showing the temple of *Venus and Rome*. The stylization of the architecture found here compares favorably with that, for instance, upon the *tensa Capitolina* of the third century A.D.,²⁰ or better, the Constantinian reliefs from the arch of Constantine.²¹ Frontality and a reduction to basic essentials characterize the style.

The temples shown by the second method, with what has been called the frontal "ornate" style, are less nu-

²⁰ E. Strong, *Art in Ancient Rome*, New York, 1928, vol. II, p. 152, fig. 487.

²¹ *Ibid.*, p. 168, fig. 517; p. 179, fig. 531.

merous.²² These coins cover the period between 35 A.D. and 173 A.D. The criterion for this group is the occurrence of a wealth of detail in the representation of the structures. Chronologically these coins cover the period in which Rome was at her greatest, and it is this circumstance which is reflected in the richness of the dies. All the types in this group were struck to commemorate imperial building activity, with the possible exception of *Isis*. Two of the types, *Concord* and *Vesta in Palatio* (Pl. II, 1, 4), were struck by Tiberius and constitute the only temple types issued by this emperor. Three are Flavian, *Isis* (Pl. III, 2), *Jupiter Capitolinus* (Pl. III, 1), and *Vesta in Foro* (Pl. III, 4), and with the exception of some minor issues of Domitian constitute the only temple types struck by these rulers. There is thus, roughly in the last two thirds of the first century A.D., a small group of coin types which were struck to commemorate imperial religious building activity, and which are isolated by their ornate style. A similarly dated ornate style is found in Roman architectural decoration, e.g.,

²² They are: *Concord* (Pl. II, 1) of Tiberius; *Vesta in Palatio* (Pl. II, 4) of Tiberius; *Isis* (Pl. III, 2) of Vespasian; *Jupiter Capitolinus* (Pl. III, 1) of Vespasian; *Vesta in Foro* (cf. Pl. III, 4) of Vespasian; *Jupiter Capitolinus* (cf. Pl. III, 1) of Titus; *Vesta in Foro* (Pl. III, 4) of Titus; *Jupiter Capitolinus* (cf. Pl. III, 1) of Domitian; *Vesta in Foro* (cf. Pl. III, 4) of Domitian; *Divus Nerva* (Pl. IV, 3) of Trajan (some issues); *Venus and Rome* (Pl. IV, 6) of Hadrian; *Venus and Rome* (Pl. V, 2) of Antoninus Pius; *Divia Faustina* (Pl. V, 4) of Antoninus Pius (some issues); *Divus Augustus* (Pl. VI, 5) of Antoninus Pius; *Mercury* (Pl. VII, 5) of Marcus Aurelius.

the ornaments of the temples of *Concord*²³ and of *Vespasian*,²⁴ and it is not without interest to see the same attitude influencing the die-cutters when they are called upon to cut designs celebrating the erection of buildings.

The other types of this group are all of the second century A.D., and belong to Trajan, Hadrian, Antoninus Pius, and Marcus Aurelius, that is between 107 A.D. and 173 A.D. Again these coins of Method 2 celebrate imperial building—construction or reconstruction.²⁵ The principle can be formulated that when temples built by imperial command from about the mid-first century A.D. through the first three quarters of the second century A.D. are shown upon coins, the buildings are shown in frontal style with richly detailed sculptural decoration. There are, however, certain exceptions to this generalization, e.g. *Venus Genetrix* (Trajan; Pl. iv, 4), *Divia Matidia* (Hadrian; Pl. v, 3), *Bacchus* (Antoninus Pius; Pl. vi, 1), all of which, with others, are exponents of Method 3, which should be recognized as an alternative for the principle stated above.

The coins of Method 2 show, then, that an attitude

²³ H. Rébert and H. Marceau, *Memoirs of the American Academy in Rome*, vol. V, Pl. 48.

²⁴ Strong, *op. cit.*, p. 56, fig. 329.

²⁵ They are: *Divus Nerva* (Trajan; Pl. iv, 3), *Venus and Rome* (Hadrian; Pl. iv, 5), *Divia Faustina* (Antoninus Pius; Pl. v, 4), *Divus Augustus* (Antoninus Pius; Pl. vi, 5), *Mercury* (Marcus Aurelius; Pl. vii, 5).

developed in Rome toward detail, both in monumental and minor art, which begins with Tiberius and continues through the Antonine period. This is an attitude of detail for detail's sake and can be seen in the monumental painting of the III, IV, and so-called V Pompeian styles,²⁶ as well as in architectural decoration,²⁷ monumental relief sculpture,²⁸ and freestanding sculpture.²⁹ This tendency does not hold the field in solitary supremacy, but shares it with that simple style discussed in Method 1 and with the style of Method 3, which, in its desire to give detail, is closely allied to Method 2, adding only an atmospheric quality. Late Antonine monumental art shows the same loss of detail which suppresses the style of Method 2 and results in the supremacy of the style of Method 1 at the same date as upon the coins.³⁰

²⁶ Strong, *op. cit.*, p. 127, fig. 439.

²⁷ As, for instance, the entablatures of the temples of *Concord* and of *Vespasian*, or the whole scheme of the arch of Trajan at Benevento (Strong, *op. cit.*, p. 81, fig. 358).

²⁸ For instance, the column of Trajan (*ibid.*, p. 78, fig. 356), Hadrianic sarcophagi (*ibid.*, p. 104, fig. 397), and the column of Marcus Aurelius (*ibid.*, p. 116, fig. 415).

²⁹ E.g. the Vatican Antinous (*ibid.*, p. 107, fig. 404), or the Caryatid in the British Museum (*ibid.*, p. 131, fig. 447).

³⁰ Note especially, in painting, the Tor Marancio works (*ibid.*, p. 130, fig. 444); in architectural decoration, the frieze and capitals of the temple of *Antoninus and Faustina* (*ibid.*, p. 114, fig. 412); in architecture itself, the development of the brick block style as seen at Ostia (*ibid.*, p. 132, fig. 450); in sculpture, the decoration of the arch of the *Argentarii* (*ibid.*, p. 144, fig. 474).

Method 3 is exemplified by the representation of fourteen temples.³¹ The choice of these has been based upon the demonstrated desire of the engraver to place his structures in space and not to show them merely as façades. The group covers the period between *ca.* 42 B.C. (*Neptune*), and the mid-third century A.D. (*Sol in Circo Maximo* of Philip Sr.). It may well be asked if it is not as usual in occurrence as Method 1, which had a similar chronological spread. However, the number of different buildings in this group is less than in the group of Method 1 (fourteen to twenty-two), and a study of the dates of issuance will show that the coins in Method 3 are concentrated in the second century A.D., with some stragglers both before and after. Therefore the difference between the all-pervasiveness of Method 1 and the concentrated character of Method 3 is clear. This concentration of the use of Method 3 in the second century A.D. illustrates what so often happens in the history of art, i.e., the exceptional popu-

³¹ They are: *Neptune* (Pl. I, 5) of *gens* Domitia; *Janus* (Pl. II, 6, 7) of Nero; *Jupiter Capitolinus* (Pl. III, 5) of Domitian (the *ludi* series); *Jupiter Tonans* (Pl. III, 6) of Domitian (the *ludi* series); *Minerva* (Pl. IV, 1) of Domitian; *Sol in Circo Maximo* (Pl. IV, 2) of Trajan; *Venus Genetrix* (Pl. IV, 4) of Trajan; *Silvanus* (Pl. IV, 6) of Hadrian; *Divus Julius* (Pl. V, 1) of Hadrian; *Divia Matidia* (Pl. V, 3) of Hadrian; *Bacchus* (Pl. VI, 1) of Antoninus Pius; *Fortuna Redux* (Pl. VII, 4) of Marcus Aurelius; *Sol Invictus* (Pl. VII, 6) of Elagabalus; *Jupiter Ultor* (Pl. VIII, 2) of Alexander Severus; *Sol in Circo Maximo* (cf. Pl. IV, 2) of Caracalla; *Sol in Circo Maximo* (cf. Pl. II, 2) of Philip Sr.

larity at a certain period of one particular manifestation of style which has been present before in an unstressed form and which will continue in an unstressed form. Thus those coins and medals which show the use of Method 3 to the best advantage are *Bacchus* (Pl. vi, 1), *Diva Matidia* (Pl. v, 3), *Divus Julius* (Pl. v, 1), *Fortuna Redux* (Pl. vii, 4), *Sol in Circo Maximo* (of Trajan; Pl. iv, 2), and *Venus Genetrix* (Pl. iv, 4), all of the second century A.D. and struck by either Trajan, Hadrian, Antoninus Pius, or Marcus Aurelius. Yet the tendency for a spatial representation is already apparent in the first century B.C. upon the *Neptune* coins (Pl. i, 5, *ca.* 42 B.C.). The conception of this early type, however, is not in the grand style of the later second century ones. A likely comparison with this phenomenon upon the coins is to be seen in the construction of the Fora at Rome. The tendency to have a monumental forum is there from the beginning, but its fulfillment as a spatial unit is not seen until the great creation of Trajan. Similarly on the coins, the desire for a monumental spatial composition is observed at an early date, but its achievement is not seen until the second century A.D. Exceptions in this group of Method 3 are the medallions of the third decade of the third century A.D., which show the precinct of *Sol Invictus* / *Jupiter Ultor* (Pl. vii, 6; viii, 2). These are struck some fifty years after the last of the second century items. The lapse in the use of Method 3 and its failure to be used after these late medallions points to a conscious revival of an earlier

style being the cause of its sudden and unexpected appearance. It is not possible to base any conclusions of continuity upon the use of Method 3 in the still later contorniates of the fourth century A.D., showing temples of *Magna Mater* and the temple of *Sol in Circo Maximo*, since these objects were the results of copying, as the obverses so plainly show.

Unlike Method 2, Method 3 is used equally for structures built by imperial command and for others which were already existing. Of the second century group mentioned on page 27, four commemorate building activity (*Sol in Circo Maximo*, *Venus Genetrix*, *Divia Matidia*, and *Bacchus*), and two do not (*Divus Julius* and *Fortuna Redux*). In the first century A.D. group, i.e. *Janus*, *Jupiter Capitolinus*, *Jupiter Tonans* and *Minerva*, one (*Janus*) commemorates a political event and the other three a religious event. The first century B.C. occurrence of the method on the Neptune coin commemorates putative building activity as demonstrated on page 11.

The study of the coins in Method 3 establishes the principle that only in the second century A.D. are ambitious spatial compositions to be found among the architectural coin types of Rome. Method 3 aims at greater realism, and so does Method 2, although different ways are used to achieve the goal. After the second century A.D., both methods are abandoned in favor of a system of schematized frontality which will be discussed below.

A comparison of the development of architectural

representations in relief sculpture shows a very similar development to that seen upon the coins of Method 3. A good first century B.C. example of this "perspective" tendency is offered by the panel from the Ara Pacis showing the sacrifice of Aeneas.³² A building appears in this scene in a manner comparable to the temple of Neptune upon the *gens* Domitia coin.³³ A Claudian relief in the Villa Medici with a sacrificial scene shows a continuation of the perspective approach.³⁴ The type of "illusionism" seen in the reliefs upon the arch of Titus furthers this attitude which can be said to culminate, but in a more plastic sense than the Flavian atmospheric one, in the reliefs upon the column of Trajan. The analogy between the coin types and the monumental architectural ensembles of the second century A.D. has already been pointed out. The coin types in Method 3, therefore, are exactly reflecting the trends seen in the major art production of the period in which they appear. A parallel circumstance can be demonstrated for the types of Method 1 which, it will be remembered, continued to flourish throughout this period too.

The coins grouped by the use of Method 4 always

³² Strong, *op. cit.*, vol. I, p. 141, fig. 162.

³³ The more usual frontal style carried through the period is shown by the processional relief from the Terme and Lateran Museums of Julio-Claudian date (*ibid.*, p. 165, fig. 195).

³⁴ *Ibid.*, p. 166, fig. 198.

show the temple in the background of a civil or religious scene. The temples, therefore, form a kind of back-drop and usually are accorded a sketchy treatment. Fifteen buildings are comprised in this group.³⁵

Many of these buildings have already appeared under other categories, especially in the group of Method 3. It is obvious that both methods have a rather similar result, since both aim to place the building in space,

³⁵ They are: *Jupiter Feretrius* (Pl. I, 3) of the gens Claudia; *Apollo Palatine* (Pl. II, 2) of Caligula; *Jupiter Capitolinus* (Pl. III, 5) of Domitian (the *ludi* series); *Jupiter Tonans* (Pl. III, 6) of Domitian (the *ludi* series); *Minerva* (Pl. IV, 1) of Domitian; *Jupiter Feretrius* (restoration; B.M.C. III, 23, 8) of Trajan; *Silvanus* (Pl. IV, 6) of Hadrian; *Divus Julius* (Pl. V, 1) of Hadrian; *Vesta in Foro* (cf. Pl. V, 5) of Faustina Sr.; *Tellus* (Pl. VI, 2) of Marcus Aurelius; *VOTA* (cf. Pl. VII, 7) of Antoninus Pius; *Tetrastyle "B"* (Gnecchi, Pl. 62, 1) of Marcus Aurelius; *Hercules Victor* (Pl. VI, 6) of Antoninus Pius; *Vesta in Foro* (cf. Pl. V, 5) of Lucilla; *VOTA* (cf. Pl. VII, 7) of Marcus Aurelius; *Fortuna Redux* (Pl. VII, 4) of Marcus Aurelius; *Vesta in Foro* (cf. Pl. V, 5) of Crispina; *VOTA* (Pl. VII, 7) of Commodus; *Vesta in Foro* (Pl. V, 5) of Julia Domna; *Hexastyle "A"* (MS. 293 not illus.) of Septimius Severus; *Venus and Rome* (Pl. VII, 1) of Caracalla; *Venus and Rome* (cf. Pl. VII, 1) of Geta; *Venus and Rome* (cf. Pl. VII, 1) of Septimius Severus; *Vesta in Foro* (cf. Pl. V, 5) of Caracalla; *Concord* (Pl. VIII, 6) of Alexander Severus and Orbiana; *Venus and Rome* (Pl. VIII, 4) of Alexander Severus and Mamaea; *Venus and Rome* (cf. Pl. VIII, 4) of Philip Sr., Jr., and Otacilia; *Venus and Rome* (cf. Pl. VIII, 4) of Etruscilla; *Vesta in Foro* (cf. Pl. V, 5) of Etruscilla; *Fortuna Redux* (Pl. VIII, 3) of Volusian and Trebonianus Gallus; *VOTA* (cf. Pl. VII, 7) of Trebonianus Gallus; *Vesta in Foro* (cf. Pl. V, 5) of Postumus; *VOTA* (cf. Pl. VII, 7) of Constantius Chlorus.

each, however, using a different means to achieve this end. Since Method 4 always uses figure groups in conjunction with the temple, the isolation of these types appears to be a valid one in contradistinction to those of Method 3.

With the exception of *Jupiter Feretrius*, *Apollo Palatine*, *Jupiter Capitolinus*, and *Jupiter Tonans*, all of these types are dated from the mid-second century A.D. to the mid-third century A.D. There is here, therefore, the same phenomenon as was observed in the case of Method 3, the sudden intensification of a type known before but hitherto neglected. It is also of significance that this method receives its greatest use in a period in which there was no great religious building activity in Rome. The struggle of the religion of the State with various foreign cults, including Christianity, had already begun, and dogma was of more importance than architecture. Accordingly more scenes of ceremony are found, and fewer independent buildings. In almost every instance, nonetheless, an effort has been made by the die-engraver so to depict the structure in the background that it can be identified easily. That he has not been successful in every case is more an indictment of our scholarship than of his ability. Exceptionally good examples of his desire for clarity are to be seen in the *Concord*, *Fortuna Redux*, and *Vesta in Foro* issues. Even the first century B.C. representation of the temple of *Jupiter Feretrius* is remarkable for its adherence to what we know from the sources about this lost structure. As a

general rule, it may be said that temples frequently appear in the background of religious or civil ceremonies on coin types of the second and early third centuries A.D. and only rarely before and afterward. During that century, the temple in the background is usually shown in the full-front method, but exceptions exist, such as *Divus Julius* of Hadrian and *Fortuna Redux* of Marcus Aurelius. During the first century A. D. such scenes are rare and when they occur the temple may be full-front (*Apollo Palatine*) or in perspective (*Jupiter Capitolinus*, *Jupiter Tonans*). The single exponent of Method 4 in the first century B.C. has the temple in full-front (*Jupiter Feretrius*).

Putting aside considerations of composition discussed above in Methods 1-4, a study of the style of the die-cutter's architectural representations will prove interesting. The issues of the first century B.C.³⁶ are all stylistically similar as far as the treatment of the relief is concerned. The relief is high and clear, and the individual elements of the various structures are carefully distinguished. This sense of clearness and logic in drawing which is found on these coins is never entirely lost dur-

³⁶ *Jupiter Capitolinus* (Pl. I, 1) of the gens Volteia; *Vesta in Foro* (Pl. I, 2) of the gens Cassia; *Jupiter Feretrius* (Pl. I, 3) of the gens Claudia; *Clementia Caesaris* (Pl. I, 4) of the gens Sepullia; *Jupiter Capitolinus* (Pl. I, 8) of the gens Petillia; *Neptune* (Pl. I, 5) of the gens Domitia; *Venus Cloacina* (Pl. I, 9) of the gens Mussidia; *Divus Julius* (Pl. I, 7) of Augustus; *Mars Ultor* (Pl. I, 6, 11) of Augustus; *Jupiter Tonans* (Pl. I, 10) of Augustus.

ing the period in which architectural coin types occur. Some of the fourth century A.D. contorniates, as for example the one showing *Magna Mater* (Sabatier, XI, 4), appear to be confused in their drawing, but such examples are very rare and outside of the general stream.

The issues of the Julio-Claudian period generally carry on this clear style, but the effect is more grandiose and more complicated.³⁷ With the exception of Nero's *Vesta* series, and his gold *Janus* coins, which imitate the first century B.C. style, all of these types show an increase in detail and a more realistic sort of observation than was to be seen in the first century B.C. group. There is an attempt to include more of the surroundings in the picture, *vide Concord* and *Vesta in Palatio*, and to set the temple in space, *vide* the bronze *Janus* coins of Nero, which have an illusionistic tendency. Such a development is absolutely natural when we consider the other branches of Roman art of the period, which are leading toward the illusionism of the Flavian period, as seen for instance on the arch of Titus. The conservatism which generally characterizes numismatic representations of all ages, however, is demonstrated by the retention of Method 1 as well as the style of the first century B.C. in the Nero gold *Janus* series as contrasted with the more progressive bronze *Janus* type of the same emperor.

³⁷ These issues are *Concord* (Pl. II, 1) of Tiberius; *Vesta in Palatio* (Pl. II, 4) of Tiberius; *Apollo Palatine* (Pl. II, 2) of Caligula; *Janus* (Pl. II, 6, 7) of Nero.

The Flavian issues carry on the scheme of undeveloped illusionism as seen in the Julio-Claudian period. However, the *ludi saeculares* coins of Domitian, showing *Jupiter Capitolinus* (Pl. III, 5) and *Jupiter Tonans* (Pl. III, 6) are strongly illusionistic, and perspective drawing of temples whose rear parts fade off into nothing is common. The same emperor's issues of *Minerva* (Pl. IV, 1) show a similar type of illusionistic drawing. Along with this advanced style, such semi-conservative ones as those of *Isis* (Pl. III, 2) of Vespasian, or *Vesta in Foro* and *Jupiter Capitolinus* (Pl. III, 1, 4) of the three Flavians, are found together with such thoroughly conservative ones as the *Vesta in Palatio* (Pl. III, 3) series. In effect the Flavian issues constitute a microcosmos containing the past and future development of pictorial architectural numismatic representation.

The Trajanic types with the exception of *Vesta in Foro* (B.M.C., III, 22, 22), a restoration of a Republican type, and *Divus Nerva* (Pl. IV, 3) which is in the frontal style of Methods 1 and 2, are all in the typical plastic illusionistic vista method of the second century A.D. The vista method encountered here compares favorably with that seen upon the column of Trajan. It is important to notice that the architectural coin types are taken over by the illusionistic method of drawing as completely as are the more monumental arts of the period.

With Hadrian, in keeping with his classical revival, the illusionistic style is abandoned for the only impor-

tant architectural type, the temple of *Venus and Rome* (Pl. iv, 5), although the actual setting of the temple of *Venus and Rome* would have lent itself admirably to the illusionistic method, since the temple is placed in an area between great porticoes (cf. the temple of *Diva Matidia*). It is retained, however, in the minor issue showing the temple of *Divus Julius* (Pl. iv, 1).

This opposition between the two main methods of architectural representation, frontal or perspective, classical or illusionistic, exemplifies the struggle in the other fields of Hadrianic art between the "Greek" and "Roman" styles. In monumental art this struggle can be seen in the contrast between the neo-classical frescoes of the tomb of the Nasonii³⁸ and the completely illusionistic fresco from the Villa of the Quintili.³⁹

The Antonine issues demonstrate the increasing abandonment of illusionism and the increased use of the stylized frontal type. Only one issue, *Bacchus* (Pl. vi, 1) of Antoninus Pius, is in the illusionistic style, the others are all in the frontal style, although sometimes in the figured style of Method 4, which may be construed as illusionistic to a certain limited extent.

An unexpected return to the illusionism of the early second century A.D. is found in the coins and medallions showing the temple of *Sol Invictus* / *Jupiter Ultor* (Pl. vii, 6; viii, 2) struck by Elagabalus and Alexan-

³⁸ Strong, *op. cit.*, vol. II, p. 128, fig. 440.

³⁹ *Ibid.*, p. 99, fig. 384.

der Severus. As noted above, this circumstance seems to be the result of conscious copying of earlier material. The dominant frontal quality of the late Antonine period can be seen working even in these "perspective" views where the emphasis is on the frontal plane of each succeeding layer of the composition, rather than upon the creation of a sense of depth. That this quality of frontality is not restricted to the coins can be observed by comparing the reliefs of the column of Marcus Aurelius⁴⁰ with those of Trajan's column.

It is this frontality coupled with schematization that finally conquers the entire field of numismatic architectural representation. All the third and fourth century A.D. issues, with the early third century exceptions noted in the paragraph above, are in this style. No attempt is made at realism, but symbolism is stressed. It is due to this development that the frequent representations of the temple of *Venus and Rome* (Pl. VIII, 4, 5; IX, 1, 3, 5-8), the symbol of Empire, are found. In this style it is no longer necessary to be faithful to details upon the actual building, but rather to an idea expressed by the representation of that building. As a result are found the confusing varieties showing this temple with from two to eight columns and with the sculptured detail schematized in a hundred different ways. However, the idea behind the representation is always the same, namely, to symbolize the Empire. That adherence to

⁴⁰ Strong, *op. cit.*, p. 116, fig. 416.

reality was not entirely abandoned is shown by the ever-present seated statue of Roma within the colonnade and by the always rectangular shape of the structure.

The numismatic architectural representations of temples in Rome, as this survey of their stylistic development establishes, follow the general stylistic developments seen in Roman monumental art. Lags such as are found in the use of the fully developed illusionistic style can with good reason be attributed to the conservatism normally found in coinage, although the *ludi* series of Domitian demonstrates the possibility of a rapid, if not persistent, adoption of a new style by the die-engravers.

APPENDIX A

THE chronological list following embodies Roman coins which bear representations of temples of the city of Rome. Plate references are given for those pieces illustrated, with indication of the metal and of the collection from which the coins illustrated derive. For convenience of reference, coins not illustrated herein have citations in italics to published reproductions of their respective types. Following are abbreviations used in the list:

A.N.S.=American Numismatic Society.

BMC.=*Coins of the Roman Empire in the British Museum*, Vols. I–III, 1923–36.

BMCR.=*Coins of the Roman Republic in the British Museum*, Vols. I–III, 1910.

C.=H. Cohen, *Description Historique des monnaies frappées sous l'empire romain*, ed.², Vols. I–VIII, Paris, 1880–92.

GN.=F. Gnechi, *I Medaglioni Romani*, Vols. I–III, Milan, 1912.

MS.=Mattingly and Sydenham, *The Roman Imperial Coinage*, Vols. I–V, 1923–38. In progress.

NZ.=*Numismatische Zeitschrift*.

NNM.=*Numismatic Notes and Monographs*.

KEY TO FOOTNOTE INDICATIONS EMPLOYED IN LIST:

§ Not able to locate a specimen.

¶ Temples not specifically identified, but grouped together as VOTA because their inscriptions concern the annual vows.

*, †, ‡ = Published in British Museum Catalogue under one of these conventional signs instead of a number.

Contorniates of the fourth century show *Janus*, *Magna Mater*, *Sol in Circo Maximo*, and *Venus and Rome*. Since these copy earlier coins and medallions, they will not be discussed here.

APPENDIX A

<i>TEMPLE</i>	<i>STRIKING AGENT</i>	<i>DATE</i>
Jupiter Capitolinus	<i>gens</i> Volteia	ca. 88 B.C.
Vesta in Foro	<i>gens</i> Cassia	ca. 60 B.C.
Jupiter Feretrius	<i>gens</i> Claudia	ca. 45 B.C.
Clementia Caesaris	<i>gens</i> Sepullia	44 B.C.
Jupiter Capitolinus	<i>gens</i> Petillia	43 B.C.
Neptune	<i>gens</i> Domitia	42/41 B.C.
Venus Cloacina	<i>gens</i> Mussidia	ca. 39 B.C.
Divus Julius	Augustus	ca. 36 B.C.
Mars Ultor	Augustus	19/14 B.C.
Jupiter Tonans	Augustus	19/15 B.C.
Concord	Tiberius	34/37 A.D.
Vesta in Palatio	Tiberius	34/37
Apollo Palatine	Caligula	37/41
Janus in Foro	Nero	64/68
Vesta in Foro	Nero	64/68
Vesta in Foro	Vespasian	71/79
Jupiter Capitolinus	Vespasian	71/79
Isis	Vespasian	71/73
Vesta in Palatio	Domitian	72
Vesta in Foro	Titus	72/73
Jupiter Capitolinus	Domitian	72/89
Vesta in Foro	Domitian	73

REFERENCE	METAL	COLLECTION	PLATE
BMCR. 3156	Æ	<i>Brit. Museum</i>	I, 1
BMCR. 3871/72	Æ	<i>R. W. Johnson</i>	I, 2
BMCR. 4206/08	Æ	<i>Brit. Museum</i>	I, 3
BMCR. 4176/77	Æ	<i>A. N. S.</i>	I, 4
BMCR. 4220	Æ	<i>F. Knobloch</i>	I, 7
BMCR. <i>East.</i> 93	Æ	<i>Brit. Museum</i>	I, 5
BMCR. 4242/43	Æ	<i>A. N. S.</i>	I, 9
BMCR. <i>Africa</i> , 33/37	Æ	<i>A. N. S.</i>	I, 8
{ BMC. 371	Æ	<i>A. N. S.</i>	I, 11
{ BMC. 704	Æ	<i>Newell</i>	I, 6
BMC. 363	Æ	<i>Newell</i>	I, 10
BMC. 133	Æ	<i>Newell</i>	II, 1
BMC. 142	Æ	<i>Newell</i>	II, 5
BMC. 69	Æ	<i>A. N. S.</i>	II, 2
{ BMC. 66	Æ	<i>Brit. Museum</i>	II, 4
{ BMC. 157	Æ	<i>Brit. Museum</i>	II, 6
{ BMC. 321	Æ	<i>Brit. Museum</i>	II, 7
BMC. 105	Æ	<i>F. Knobloch</i>	II, 3
BMC. p. 11†			<i>cf. III, 4</i>
BMC. 721	Æ	<i>Brit. Museum</i>	III, 1
BMC. 780	Æ	<i>Brit. Museum</i>	III, 2
BMC. <i>Vesp.</i> 648			<i>cf. III, 3</i>
BMC. <i>Vesp.</i> 120	Æ	<i>Copenhagen</i>	III, 3
BMC. 434A	Æ	<i>Brit. Museum</i>	III, 5
BMC. p. 23*			<i>cf. III, 4</i>

<i>TEMPLE</i>	<i>STRIKING AGENT</i>	<i>DATE</i>
Vesta in Palatio	Vespasian	73
Vesta in Palatio	Titus	73
Jupiter Capitolinus	Titus	73/81
Tetrastyle "A"	Titus	80
Minerva	Domitian	85/89
Jupiter Tonans	Domitian	88/89
Distyle "B"	Domitian	88/89
Distyle "A"	Domitian	95/96
Sol in Circo Maximo	Trajan	104/111
Venus Genetrix	Trajan	104/111
Divus Nerva	Trajan	104/111
Vesta in Foro	Trajan (<i>restitution</i>)	107
Jupiter Feretrius	Trajan (<i>restitution</i>)	107
Silvanus	Hadrian	119
Venus and Rome	Hadrian	119/138
Divus Julius	Hadrian	119/138
Diva Matidia	Hadrian	120/121
Venus and Rome	Antoninus Pius	139/144
Vesta in Foro	Faustina Sr.	ca. 140
Diva Faustina	Antoninus Pius	post 141
Bacchus	Antoninus Pius	post 145
Tellus	Marcus Aurelius	145
Divus Augustus	Antoninus Pius	145/161
Isis	Faustina Jr.	147/174
VOTA	Antoninus Pius	148/149

REFERENCE	METAL	COLLECTION	PLATE
BMC. 664			<i>cf. III, 3</i>
BMC. <i>Vesp.</i> 674	Æ	<i>Brit. Museum</i>	III, 4
BMC. p. 175‡			<i>cf. III, 1</i>
BMC. p. 236†			
BMC. 296	Æ	<i>Newell</i>	IV, 1
BMC. 423	Æ	<i>Brit. Museum</i>	III, 6
BMC. p. 388*			<i>cf. BMC. Pl. 77, 9</i>
BMC. 229			<i>cf. BMC. Pl. 66, 16</i>
BMC. 853/855	Æ	<i>Vienna</i>	IV, 2
BMC. 863	Æ	<i>Brit. Museum</i>	IV, 4
BMC. 955/956	Æ	<i>Newell</i>	IV, 3
BMC. 685			<i>cf. BMC. Pl. 22, 22</i>
BMC. 689			<i>cf. BMC. Pl. 23, 8</i>
SOTHEBY SALE 7/8/01, 255	Æ		IV, 6
C. 1423	Æ	<i>Paris</i>	IV, 5
BMC. 1310	Æ	<i>Paris</i>	V, 1
C. 550	Æ	<i>Vienna</i>	V, 3
C. 1074	Æ	<i>Berlin</i>	V, 2
C. 310			<i>cf. V, 5</i>
C. <i>Faust.</i> 66	Æ	<i>Berlin</i>	V, 4
C. 1187	Æ	<i>Paris</i>	VI, 1
GN. ii, 37, 84	Æ	<i>Berlin</i>	VI, 2
C. 805	Æ	<i>Brit. Museum</i>	VI, 5
GN. ii, 41, 24	Æ	<i>Evans</i>	VI, 3
C. 1092 ¶			<i>cf. VII, 7</i>

<i>TEMPLE</i>	<i>STRIKING AGENT</i>	<i>DATE</i>
Genius Senatus	Antoninus Pius	152/160
Tetrastyle "B"	Marcus Aurelius	153
Hercules Victor	Antoninus Pius	155
Vesta in Foro	Lucilla	164/169
VOTA	Marcus Aurelius	167/179
Mercury	Marcus Aurelius	173
Fortuna Redux	Marcus Aurelius	173
Vesta in Foro	Crispina	177/183
VOTA	Commodus	178/185
Janus	Commodus	186
Vesta in Foro	Julia Domna	196/211
Hexastyle "B"	Julia Domna	196/211
Hexastyle "A"	Septimius Severus	197/198
Venus and Rome	Caracalla	197/211
Jupiter Sospitator	Septimius Severus	198/201
Venus and Rome	Geta	200/202
VOTA	Septimius Severus	202
Venus and Rome	Septimius Severus	202/210
Jupiter Sospitator	Geta	203/208
Jupiter Sospitator	Caracalla	204/210
Sol in Circo Maximo	Caracalla	210/213
Vesta in Foro	Caracalla	214/215
Sol Invictus	Elagabalus	222
Concord	Alexander Severus and Orbiana	222/235
Jupiter Ultor	Alexander Severus	224

REFERENCE	METAL	COLLECTION	PLATE
C. 338	Æ	<i>Paris</i>	VI, 4
C. 662			<i>cf. Gn. II, 62, 1</i>
C. 213	Æ	<i>Vienna</i>	VI, 6
C. 105			<i>cf. V, 5</i>
C. 1029 ¶			<i>cf. VII, 7</i>
C. 534	Æ	<i>H. Stein</i>	VII, 5
C. 3	Æ	<i>Berlin</i>	VII, 4
C. 45			<i>cf. V, 5</i>
C. 977	Æ	<i>Berlin</i>	VII, 7
C. 515	Æ	<i>Vienna</i>	VII, 2
C. 240	Æ	<i>Berlin</i>	V, 5
C. 147 §			
C. 645 §			
MS. 143A			<i>cf. VII, 1</i>
C. 245			<i>cf. VII, 3</i>
C. 176	Æ	<i>Paris</i>	VII, 1
C. 784 ¶			<i>cf. VII, 7</i>
C. 619			<i>cf. VII, 1</i>
C. 65			<i>cf. VII, 3</i>
C. 108	Æ	<i>Berlin</i>	VII, 3
C. 236			<i>cf. IV, 2</i>
C. 249			<i>cf. V, 5</i>
GN. iii, 41, 6	Æ	<i>Gnecchi</i>	VII, 6
C. 3	Æ		VIII, 6
C. 103	Æ	<i>Hess 5/22/35, 2517</i>	VIII, 2

<i>TEMPLE</i>	<i>STRIKING AGENT</i>	<i>DATE</i>
Venus and Rome	Alexander Severus	228/231
Venus and Rome	Alexander Severus and Mamaea	228/231
Sol in Circo Maximo	Philip Sr., Otacilia, and Philip Jr.	248
Venus and Rome	Philip Sr.	248
Venus and Rome	Otacilia	248
Venus and Rome	Philip Sr., Otacilia and Philip Jr.	248
Venus and Rome	Philip Jr.	248
Venus and Rome	Etruscilla	249/251
Vesta in Foro	Etruscilla	250/251
Venus and Rome	Hostilianus	251
Juno Martialis	Trebonianus Gallus	251/253
Juno Martialis	Volusian	251
Venus and Rome	Trebonianus Gallus	251/254
Juno Martialis	Trebonianus Gallus and Volusian	252
VOTA	Trebonianus Gallus	252
Fortuna Redux	Trebonianus Gallus	252
Fortuna Redux	Trebonianus Gallus and Volusian	252
Fortuna Redux	Volusian	252
Venus and Rome	Volusian	252/254
Venus and Rome	Postumus	263
Vesta in Foro	Postumus	264
Venus and Rome	Claudius II	268/269

AS COIN TYPES

47

REFERENCE	METAL	COLLECTION	PLATE
C. 361			<i>cf. VII, 1</i>
C. 21	Æ	Paris	VIII, 4
C. 12			<i>cf. IV, 2</i>
C. 198			<i>cf. VIII, 5</i>
C. 71			<i>cf. VIII, 5</i>
C. 14			<i>cf. VIII, 5</i>
C. 81			<i>cf. VIII, 5</i>
C. 28			<i>cf. VIII, 5</i>
C. 33			<i>cf. V, 5</i>
C. 53			<i>cf. VIII, 5</i>
C. 49	Æ	Berlin	VIII, 1
C. 40			<i>cf. VIII, 1</i>
C. 110	Æ	Brit. Museum	VIII, 5
C. 7			<i>cf. VIII, 1</i>
GN. ii, 103, 6 ¶			<i>cf. VII, 7</i>
C. 44			<i>cf. VIII, 4</i>
C. 5			<i>cf. VIII, 4</i>
C. 37	Æ	Vienna	VIII, 3
C. 115			<i>cf. VIII, 5</i>
C. 278			<i>cf. VIII, 5</i>
MS. 11			<i>cf. V, 5</i> ✓
C. 248 §			<i>cf. VIII, 5 (?)</i>

<i>TEMPLE</i>	<i>STRIKING AGENT</i>	<i>DATE</i>
Apollo Medicus	Quintillus	270
Venus and Rome	Probus	ca. 278
Genius Exercitus	Carinus	283/285
Venus and Rome	Carausius	287/293
Venus and Rome	Allectus	293/296
Hercules Victor	Maximianus Hercules	295
Venus and Rome	Galerius Maximianus	ca. 300
Venus and Rome	Constantius Chlorus	305/306
VOTA	Constantius Chlorus	305
Venus and Rome	Maximianus Hercules	306/310
Venus and Rome	Maxentius	306/312
Venus and Rome	Constantine I	306/309
Venus and Rome	Alexander Tyrans	311

REFERENCE	METAL	COLLECTION	PLATE
C. 6	Æ	<i>Vienna</i>	IX, 4
C. 530	Æ	<i>Berlin</i>	IX, 5
C. 36	Æ	<i>Copenhagen</i>	IX, 2
C. 298	Æ	<i>Hunterian</i>	IX, 1
C. 60			<i>cf. IX, 1</i>
C. 308		<i>cf. Bol. Mus. Civ. Padua, 1913, Pl. IX</i>	
NZ. 1916, p. 195			<i>cf. IX, 3</i>
C. 259			<i>cf. IX, 3</i>
NNM. 28, p. 23, No. 3			<i>cf. VII, 7</i>
C. 75	Æ	<i>F. Knobloch</i>	IX, 3
{ C. 21	Æ	<i>F. Knobloch</i>	IX, 6
{ C. 35	Æ	<i>Vienna</i>	IX, 7
C. 77	Æ	<i>Berlin</i>	IX, 8
C. 10			<i>cf. IX, 8</i>

APPENDIX B

A CERTAIN number of coin types with architectural representations which have hitherto been considered to show temples in the city of Rome have, after examination, been rejected as either not showing a temple but a secular building, or as not showing a temple in the city itself. The reasons for this rejection will appear in a forthcoming study. The types which have been rejected are listed below with a reference where a typical piece may be found. (For abbreviations, see Appendix A, p. 39.)

TYPE	STRIKING AGENT	REFERENCE
1 Aesculapius	<i>gens</i> Rubria	BMCR. i, 313
2 Jupiter Libertas	<i>gens</i> Egnatia	BMCR. i, 40, 3276
3 Sol	<i>gens</i> Antonia	BMCR. ii, 398, 60
4 Diana	Augustus	BMCR. ii, 15, 4355
5 "Curia"	Augustus	BMC. i, 103, 631
6 Minerva	Domitian	BMC. ii, 346, 241
7 Magna Mater	Domitian	BMC. ii, 346, 239
8 Serapis	Domitian	BMC. ii, 345, 238
9 Octostyle	Domitian	BMC. ii, 338, 199
10 Hexastyle	Domitian	BMC. ii, 347, 242
11 Tiber "Temple"	Domitian	BMC. ii, 396, 432
12 Hercules	Hadrian	BMC. iii, 253, 98
13 Aesculapius	Septimius Severus	C. iv, 51, 484
	Caracalla	C. iv, 185, 409
	Geta	C. iv, 263, 102
14 Aesculapius	Caracalla	C. iv, 177, 317
15 Jupiter Custos	Caracalla	C. iv, 155, 112
	Diocletian	C. vi, 443, 275
	Maximianus	
	Hercules	C. vi, 529, 364
16 Temple group	Philip Sr., Jr., and Otacilia	C. v, 136, 7
17 Spes Publica	Herennius	
	Etruscus	C. v, 220, 39

TEMPLES OF ROME

51

	<i>TYPE</i>	<i>STRIKING AGENT</i>	<i>REFERENCE</i>
18	Divus	Maximianus	
	Maximianus	Hercules	C. vi, 495, 14
		Galerius	
		Maximianus	C. vii, 102, 2
19	Divus	Constantius	
	Constantius	Chlorus	C. vii, 73, 169
20	Divus Romulus	Romulus	C. vii, 182, 1

ALPHABETICAL KEY TO PLATES

Apollo Medicus	Pl. ix, 4
Apollo Palatine	Pl. ii, 2
Bacchus	Pl. vi, 1
Clementia Caesaris	Pl. i, 4
Concord	Pl. ii, 1; viii, 6
Diva Faustina	Pl. v, 4
Diva Matidia	Pl. v, 3
Divus Augustus	Pl. vi, 5
Divus Julius	Pl. i, 8; v, 1
Divus Nerva	Pl. iv, 3
Fortuna Redux	Pl. vii, 4; viii, 3
Genius Exercitus	Pl. ix, 2
Genius Senatus	Pl. vi, 4
Hercules	Pl. vi, 6
Isis	Pl. iii, 2; vi, 3
Janus	Pl. ii, 4, 6, 7; vii, 2
Juno Martialis	Pl. viii, 1
Jupiter Feretrius	Pl. i, 3
Jupiter Optimus Maximus	Pl. i, 1, 7; iii, 1, 5
Jupiter Sospitator	Pl. vii, 3
Jupiter Tonans	Pl. i, 10; iii, 6
Jupiter Ultor	Pl. viii, 2
Mars Ultor	Pl. i, 6, 11
Mercury	Pl. vii, 5
Minerva	Pl. iv, 1
Neptune	Pl. i, 5
Sol in Circo Maximo	Pl. iv, 2
Sol Invictus	Pl. vii, 6
Silvanus	Pl. iv, 6
Tellus	Pl. vi, 2
Venus Cloacina	Pl. i, 9
Venus Genetrix	Pl. iv, 4
Venus and Rome	Pl. v, 2; vii, 1; viii, 4, 5; ix, 1, 3, 5, 6, 7, 8
Vesta in Foro	Pl. i, 1; ii, 3; iii, 3; v, 5
Vesta in Palatio	Pl. ii, 5; iii, 4
VOTA	Pl. vii, 7

PLATES

TEMPLES OF ROME AS COIN TYPES

PLATE I



1



2



3



4



5



6



7



8



9



10



11



1



2



3



4



5



6



7



1



2



3



4



5



6



1



2



3



4



5



6



1



2



3



4



5



1



2



3



4



5



6



1



2



3



4



5



6



7



1



2



3



4



5



6

TEMPLES OF ROME AS COIN TYPES

PLATE I



1



2



3



4



5



6



7



8



9



10



11



1



2



3



4



5



6



7



1



2



3



4



5



6



1



2



3



4



5



6



1



2



3



4



5



1



2



3



4



5



6



1



2



3



4



5



6



7



1



2



3



4



5



6



1



2



3



4



5



6



7



8

29
35-
N9

JAN 6 1941

NUMISMATIC NOTES
AND MONOGRAPHS

No. 91



THE EARLIER STATERS
OF HERACLEA LUCANIAE

BY
EUNICE WORK

THE AMERICAN NUMISMATIC SOCIETY
BROADWAY AT 156TH STREET
NEW YORK
1940

PUBLICATIONS

The American Journal of Numismatics, 1866-1920.

Monthly, May, 1866-April, 1870.

Quarterly, July, 1870-October, 1912.

Annually, 1913-1920.

With many plates, illustrations, maps and tables. Less than a half-dozen complete sets of the Journal remain on hand. Price on application.

The numbers necessary to complete broken sets may in most cases be obtained. An index to the first fifty volumes has been issued as part of Volume LI. It may be purchased separately for \$3.00.

The American Numismatic Society. Catalogue of the International Exhibition of Contemporary Medals. March, 1910. New and revised edition. New York. 1911. xxxvi, 412 pages, 512 illustrations. \$3.00.

Numismatic Notes and Monographs

9. David Eugene Smith, LL.D. Computing Jetons. 1921. 70 pp. 25 pls. \$1.50.
10. Edward T. Newell. The First Seleucid Coinage at Tyre. 1921. 40 pp. 8 pls. \$1.00.
12. Howland Wood. Gold Dollars of 1858. 1922. 7 pp. 2 pls. 50c.
13. R. B. Whitehead. Pre-Mohammedan Coinage of N. W. India. 1922. 56 pp. 15 pls. \$2.00.
14. George F. Hill. Attambelos I of Characene. 1922. 12 pp. 3 pls. \$1.00.
15. M. P. Vlasto. Taras Oikistes (A Contribution to Tarentine Numismatics). 1922. 234 pp. 13 pls. \$3.50.
17. Agnes Baldwin. Six Roman Bronze Medallions. 1923. 39 pp. 6 pls. \$1.50.
18. Howland Wood. Tegucigalpa Coinage of 1823. 1923. 16 pp. 2 pls. 50c.
19. Edward T. Newell. Alexander Hoards—II. Demanhur Hoard. 1923. 162 pp. 8 pls. \$2.50.
20. Harrold E. Gillingham. Italian Orders of Chivalry and Medals of Honour. 146 pp. 34 pls. \$2.00.
21. Edward T. Newell. Alexander Hoards—III. Andritsaena. 1924. 39 pp. 6 pls. \$1.00.
22. C. T. Seltman. A Hoard from Side. 1924. 20 pp. 3 pls. \$1.00.
23. R. B. Seager. A Cretan Coin Hoard. 1924. 55 pp. 12 pls. \$2.00.

NUMISMATIC
NOTES AND MONOGRAPHS

NUMBER 91

NUMISMATIC NOTES AND MONOGRAPHS
is devoted to essays and treatises on subjects
relating to coins, paper money, medals and
decorations and is uniform with Hispanic
Notes and Monographs published by the
Hispanic Society of America, and with In-
dian Notes and Monographs issued by the
Museum of the American Indian—Heye
Foundation.

PUBLICATION COMMITTEE

AGNES BALDWIN BRETT, *Chairman*

STEPHEN H. P. PELL

THOMAS O. MABBOTT

EDITORIAL STAFF

SYDNEY PHILIP NOE, *Editor*

SAWYER MCA. MOSSER, *Associate Editor*

THE EARLIER STATERS OF HERACLEA LUCANIAE

BY
EUNICE WORK



THE AMERICAN NUMISMATIC SOCIETY
BROADWAY AT 156TH STREET
NEW YORK
1940

COPYRIGHT 1940 BY
THE AMERICAN NUMISMATIC SOCIETY

THE MERRYMOUNT PRESS, BOSTON, U. S. A.

THE EARLIER STATERS OF HERACLEA LUCANIAE

BY EUNICE WORK

∴

INTRODUCTION

THE purpose of this monograph is to supply the groundwork for an accurate chronology of the staters of Heraclea Lucaniae to *circa* 300 B.C. Four kinds of evidence have been weighed: the history of the city, contemporary coins of neighboring cities, hoards, and finally the sequence of dies in the coins of Heraclea itself.

Comments on the establishment and history of Heraclea have been gathered from both Greek and Latin writers. Coins of Tarentum, Thurium, Croton, and Metapontum have been studied for corroboration in grouping types and signatures. For the coins of these cities in turn, the exact comparison and grouping of Heracleian dies should be valuable.

The usefulness of hoards for the present study is limited by the wide range of their terminal dates, as will be shown by definite example. The burden of proof rests then with the sequence of dies.

The coins classified in the *Historia Numorum* under Heraclea II and III, pp. 71-72, staters of full weight, are here represented by ninety-two groups. Each num-

ber, 1 to 92, stands for a single combination of dies. The groups are the result of the comparison of three hundred staters from all available sources.

The presentation of as many as three hundred coins in a systematic study has been made possible by friendly help and encouragement from every side: Mr. Newell and Mr. Noe in New York, Mr. Robinson at the British Museum, Sir Sydney Cockerell, with the stimulus of interest as well as direct assistance; and Dr. Lloyd, Sir George Macdonald, Dr. Milne, M. Jean Babelon. All these have aided with a kindness which has fairly justified the task.

There has been ready aid from museum officials throughout Europe: in the Museo Nazionale of Naples, the Bibliothèque Royale of Brussels, and in Copenhagen, Vienna, Berlin, and Munich. No one, indeed, who was consulted stopped short of the fullest response.

THE EARLIER STATERS OF HERACLEA LUCANIAE

THE mighty Heracles, it seems, was rival to the conqueror Alexander in fastening his name on cities throughout the ancient world. Of the Alexandrias, one has taken precedence and may now be mentioned without distinguishing adjective of mountain, people, or country. But to the name of thirty Heracleas of more and of less renown, it is necessary to add a descriptive phrase of location or history.

The Thessalian Heraclea, in Thucydides and Xenophon, is designated by its neighborhood ἡ ἐν Τραχίνι or ἡ Τραχινία. Strabo speaks of the Macedonian town as Λύγκηστis. Heraclea Minoa has added the name of its reputed founder. Asia Minor has its *ad Latmum*, its *ad Sipylum*, and *Salbace*. The South Italian town whose staters are presented here is set apart by the territorial name of Lucania. It is one of the four Heracleas of Roman history and geography mentioned in the pages of Mela, Pliny, Cicero, Livy, Caesar. The geographical index of the *Historia Numorum* includes these four as well as five others in the list of mint cities of that name. These cities are represented by coins ranging from the years of Phoenician influence in the Sicilian Heraclea, through Spartan colonial enterprise, to the bronze coinage of the Roman Empire in the Heracleas of Macedonia and Asia Minor.

In history and in legend the fame of Heraclea Lucaniae is overshadowed by that of its neighbors. Thurium, less than forty miles to the south, numbered among its colonists Herodotus of Halicarnassus, and Lysias, the orator. Croton, the home of Pythagoras and his brotherhood, is credited even now, in a popular manual of music, with the "invention of the science of music, in 530 B.C." The strong man of Greek athletics lived at Croton too, Milo, whose philosophy did not keep pace with his muscles. Metapontum, the city of the golden fields of grain, is said to have seen the death of Pythagoras. Tarentum has been distinguished for its harbor from the time the son of Poseidon came swinging into the roadstead on his dolphin, through Greek, Roman, and Byzantine occupation down to its more recent impressment as a torpedo-boat base. Heraclea has no such claim to renown. One of the classical dictionaries, in fact, sets down the word Heraclea as "a name given to more than forty towns in Europe, Asia, Africa, and the islands of the Mediterranean." So sweeping a dismissal may be countered by two points of interest—Heraclea's one-time headship of the Italiot Greek confederacy, and, of greater concern, the staters of a series of coins deservedly studied and admired.

If the coinage of a city follows the periods of its history, as it is reasonable to expect, the logical divisions in the chronology of Heraclea Lucaniae would presuppose variations of type or weight determined by the time of the founding of the colony, by the successive hegemonies

of Archytas of Tarentum, Archidamus, Alexander of Epirus, and Cleonymus; by a possible interval of Lucanian jurisdiction; Pyrrhus; and finally, by the post-Pyrrhic Roman protectorate. The surrender of the city to Hannibal in 214 B.C. takes it beyond the range of the present study.

The staters of Heraclea, like the periods of its history, fall into a neat set of groupings, but added to the impossibility of finding a correspondence between coin types and hegemonies, there is the difficulty of fixing the various groups in an unassailable order. It is true that the technical evidence of the coins can be incontrovertible within an interlocking series of dies, obverse and reverse, but there will be inevitable breaks in the sequence when there are no linking coins at hand. When a linking coin can be found, it must be examined with wary skepticism until there is no doubt of authenticity and no danger of mistaking a flaw for a die worn by long use.

Existing classifications of the staters of Heraclea are based upon style, and upon historical and economic evidence, upon the evidence of hoards and of contemporary coinages of neighboring cities. To these indications of chronology we shall now add the data of an exact comparison of the dies of all available staters. The scheme is to follow the sequence of dies, to trace by microscopic study a single die from the time it first appears in its sharp and perfect outlines, until, as one coin after another is struck from it, the blows of the hammer produce a tiny break. A faint crack is sometimes mended, furnishing

6 THE EARLIER STATERS

its own kind of clue. Sometimes, unchecked, the break widens almost imperceptibly through the striking of as many as five or six coins before the die must be discarded. It is assumed that the reverse die first gives way, subject to the direct blows of the hammer. When it is replaced it is thus joined with the obverse of the previous combination. The obverse itself then breaks before the new reverse is out of use; and as a series of coins is followed from one group to the next, an almost rhythmical pattern can be traced.

The dearth of evidence for a certain correlation of history and coinage for the town of Heraclea does not leave us entirely without resource. There are two possibilities, each believed to be profitable in itself. When they are taken in conjunction they will at least furnish a solid foundation, to which future evidence may be added. The first is to marshal the elements of the history of Heraclea which are scattered through the somewhat intractable observations of contemporary and later chroniclers. The second is to establish groups of coins in which an evolution is shown through the combination of a common obverse die with two or more reverses, or a common reverse die with two or more obverses, with the hope that the final connecting links between the groups may be found eventually in undiscovered hoards or in collections hitherto unavailable for study. The method of exact comparison of dies has the advantage of discouraging arid and unscientific speculation about doubtful symbols and letters. The criterion of style

within such short time limits is hardly to be trusted. On the other hand, it does not mean that imagination is to be entirely barred. Art is involved, as well as economics, and there will be no apology for borrowings from the artists' judgments.

The history of Heraclea as it appears in the annals of Italy whether Greek or Roman, is that of a city away from the march of major events. Heraclea was founded in 433–432 B.C. Diodorus (XII 36) sets down the data of that somewhat prosaic year. At Athens, one Apseudes was archon. The Roman consuls were T. Menenius and Proclus Geganius Macerinus. Spartacus, king of Bosporus, died after a reign of seventeen years. Seleucus succeeded him and was king for four years. There follows an account of Meton and his calendar, with several lines of detail and comment. The brief chapter closes with this unannotated remark: "And in Italy the Tarentines removed from their native place the people who were living in the town of Siris and, adding townsmen of their own, they established the city which was named Heraclea."

Strabo (VI 264) explains the founding of Heraclea as a compromise between the Thurians, under the Spartan Cleandridas, and the Tarentines. These warring factions "peopled Siris jointly, although it was considered the colony of the Tarentines; later it was called Heraclea, with change of site as well as of name." Strabo is here relying, he says, upon the word of Antiochus. Siris itself, according to Strabo (VI 280), was thought to have

been a Trojan city, since it possessed a wooden image of the Trojan Athene. The canny Strabo thought it no more remarkable that the image should be reputed to open and close its eyes than that the image of the Trojan Athene, brought straight from Troy, should appear in more Italian towns than one. Strabo mentions incidentally the counter-tradition that Siris as well as Sybaris was of Rhodian origin. The site of Siris, he tells us, was about two and a half miles from Heraclea, and about thirty-three from Thurii. The twenty-four stadia from Heraclea to Siris is attested by Appian too. The Elder Pliny (N. H. III 197) speaks of Heraclea's position *inter Sirim et Acirim*, and adds that it is sometimes called Siris. Livy (VIII 24) suggests no doubt as to name or origin when he records the conquest of Alexander of Epirus, who took the city of "Heraclea, a Tarentine colony, from the Lucanians."

According to this meager account of the beginnings of Heraclea as a colony, the coinage might be expected to show something of the nature of each of the component parts: an Athenian element from Thurium and from Tarentum a Dorian touch, along with the inevitable economic influence of so powerful a city. Thus Head (*Historia Numorum* p. 73) speaks of the coin types of Heraclea as reflecting its double origin: "the head of Athena is borrowed from Thurium and the cultus of Herakles, who gave his name to the city, from the Dorian Tarentum." This statement is almost literally justified in the close resemblance of the Thurian coin

to No. 6 of the Berlin staters of Heraclea (cf. Pl. III).

For fifty years after the establishment of Heraclea its history proceeds without chronicled event. The Peloponnesian war had begun and ended. In the narrative of the campaigns and allegiances of the western field of war the name of Heraclea is not mentioned, though the accounts of the moves of Thurium and Tarentum are not to be read without regard to Heraclea. The year 380 B.C., when Archytas took command at Tarentum, is unanimously set as the termination of the first era of the Heracleian mint. It is the only one of three or four eras on which authority is not divided. Even that attempt at definition is hard to substantiate by the coinage itself.

The fullest single account of the generalship of Archytas is found in *Diogenes Laertius*, VIII, 79–83. We are told that he held command in the city for seven terms of office in spite of a law to prohibit even a second year. It is said that Archytas himself was undefeated in battle, though his army was on one occasion captured immediately when some variance led Archytas to resign the leadership. Diogenes Laertius follows these observations with matters of literary and scientific interest. Archytas, however, appears once more in his pages with the assumption of influence. In the sketch of Plato (*Diog. Laert.* III, 22), the biographer quotes a letter from Archytas to the younger Dionysius asking pardon for Plato, whom the tyrant had accused of conspiring for the liberation of Sicily.

The lexicographer Suidas adds little to our information. His brief paragraph makes every word count: Ἀρχύτας Ταρεντῖνος τοῦ κοινοῦ δὲ τῶν Ἰταλιωτῶν προέστη, στρατηγὸς αἰρεθεὶς αὐτοκράτωρ ὑπὸ τῶν πολιτῶν καὶ τῶν περὶ ἐκείνον τὸν τόπον Ἑλλήνων. "Archytas, a Tarentine, in command of the Italiot federation, elected, absolute in power, chosen by the Greeks of all the neighborhood as well as by the citizens of Tarentum."

Strabo (VI 4) refers to the command of Archytas as being "for a long time." His further description (VI 280) of the fortunes and character of Tarentum takes her to task for the feeble policy of using foreign generals. These he enumerates, and continues with an instance of the inevitable friction between alien commanders and their employers. The people of that part of Magna Graecia had been holding their usual assembly at Heraclaea under Tarentine authority, but now a quarrel with the general of the moment, Alexander of Molossus, led to his attempt to change to Thurian territory the place of meeting. The resulting complications are said to have been responsible for Alexander's death.

Of the other generals those who immediately preceded and followed Alexander were of Sparta. A fourth was Agathocles of Syracuse, and the last, in the war with Rome, Pyrrhus of Epirus. In none of the records do we find more than a conjectural basis for numismatic chronology. The coins themselves must be expected to bear the brunt of the decision as they stand in series on the plates and accompanied as they

are by exact tabulations of the specimens not pictured.

The coin that takes first position in the chronology of the staters of Heraclea has kept its place unquestioned in numismatic commentaries. The fifteen examples of this type are found in a dozen different collections, illustrating the geographic range of succeeding groups as well: London, Cambridge, Paris, New York, Berlin, Geneva, Naples, The Hague. There is none in Vienna, none in Brussels or Munich, in Copenhagen or Oxford. The fifteen coins show a single obverse die, the head of Athena adorned with a wreath of olive, against the background of the aegis with its border of intertwining serpents. Three coins, and a possible fourth, change the reverse die, not in type but in proportion of both design and letters. The Heracles of this die is half-reclining on a seat over which the lion-skin has been flung. He holds a one-handled cup in the outstretched right hand; at his left hand leans the club, with a sea-shell at its side.

No. 3, an isolated pair of coins, one in Paris and one in New York, is given its place on grounds of style alone. Athena has put on her helmet now and will wear it to the end of the series, with one sharp change of kind, when the round Athenian headgear gives place to the Corinthian's long straight visor (No. 57, Pl. V). The changing adornment of the helmet, sea-horse or Scylla, cannot be so strictly defined. There is no point at which one can say with certainty that here the griffin or sea-horse type ends and the Scylla begins. On this second type, the sea-horse of the helmet has a blunt, curled wing

reminiscent of the early Corinthian colts. Heracles on the reverse stands at grips with the lion.

In the next group (Nos. 4–5), the types are the same, but the sea-horse straightens his wings and Heracles changes his stance. These first groups are set in juxtaposition by the symbol of the cockle-shell. It is true that such a placing puts a Scylla type unexpectedly early, but actual mulings of later groups show a like interchange, careful as we must be about judgments based on muling.

As the series proceeds the later groups too are held in tenuous bond by symbols: wheat-heads, bows and quivers, and clubs; still later they are fixed in place by the inscriptions of magistrate or artist, as numismatic tradition has distinguished such signatures. In some cases there are parallel “signatures” in the coinage of neighboring cities, Metapontum, Thurium, or Tarentum, to lend greater weight to a classification. All such coincidences of signatures may have significance, but in the present state of our knowledge we are still unable to declare unequivocally what that significance is.

Changes in style and pattern are marked, yet not indicative beyond controversy, of place in the series. A type in which the wings of the griffin curl again, but keep their points (Nos. 8–12) is represented by nineteen coins apparently struck from a single obverse die. With this die five reverse dies are combined, and two of those are combined in turn with a single obverse of the Scylla type.

It is at this point that we begin to find single letters

and inscriptions, a sigma at the side of Heracles (No. 15), a Φ between his feet (Nos. 17-19), an A above his bow and club (No. 24), or at Athena's neck (Nos. 19-20). Now appears the astonishing and delightful Aristoxenus signature, in microscopic letters at the base of the helmet's crest (Nos. 19-20). The name is repeated in part on the exergual line of the reverse, $\text{API}\Sigma\text{TO}\Xi\text{E}$ (No. 20).

Before we take final leave of the sea-horse type there comes a facing head of Athena, with at least two different obverse and three reverse dies (Nos. 21-23). Of the reverse types one fairly poses Heracles for the photographer, though the lion seems no less fierce in his attack on this round-headed youngster swinging an Indian club.

With the next coin (No. 24), the Scylla type is established, to follow through to the end of the series. This strange creature hurls a stone (Nos. 25-26 and from 32 onward), or shoulders an oar or rudder (Nos. 13-14, 19-20, 27-30), or holds a short staff (No. 31). But just before the helmet transition, made once and for all (No. 57), there comes a decided change in the type of the reverse (No. 49). Heracles has conquered the lion and with the struggle over, stands holding the pelt on his arm—a pelt with a score of variations of draping, and differences of paws and nose and tail. The triumphant Heracles appears first on several coins having obverses with the Athenian helmet type (Nos. 49-56). At his left, flies Nike with a crown of victory. The first coin of the

Corinthian helmet pattern is so placed because of a similar Nike, as well as the same inscription, ΑΘΑ, beside the club of Heracles. At the right stands a cup as symbol, and when the Nike disappears the cup continues for as many as twenty-six types with slightly varying dies. A reduced-weight stater rounds out Plate VIII.

The comparison of variant forms of the name of Heraclea has been of little use in assigning places to the groups established by the evidence of muling. Beginning with the earliest coins the spelling of the name changes with no apparent pattern of juxtaposition and frequency. Two coins with the same obverse will have reverse dies with differences of epsilon and eta, with or without an iota before the genitive ending, and the unaccountable presence or absence of the rough breathing. The only retrograde inscription comes well along in the series, on a reverse die that appears twice, in one case with a die used for four other reverses. These four represent two other variations of spelling, to which a third may be added if a probable mistake is to be counted as a variation. In the order in which the coins are here placed the spellings appear in seven variations, with an incomplete form making an eighth:

- | | |
|--------------|---------------|
| 1. ΗΡΑΚΛΕΙΩΝ | 5. ΗΡΑΚΛΕΙΩΝ |
| 2. ΗΡΑΚΛΕΩΝ | 6. ΗΗΡΑΚΛΕΩΝ |
| 3. ΗΡΑΚΕΙΩΝ | 7. ΗΗΡΑΚΛΗΙΩΝ |
| 4. ΗΗΡΑ — | 8. ΗΗΡΑΚΛΕΙΩΝ |

The landmark of reduction of standard, from a stater

of seven and a half grams to one of six and a half, or less, coincides with that of the surrounding cities. Head dates this reduction c. 281 B.C. The style shows no sharp demarcation of workmanship. Heracles has long since slain the lion of his earlier struggles and is standing in a more and more self-conscious pose. Symbols and letters are multiplied, and artistry is lost in apparent carelessness.

A long and careful contemplation of the staters of Heraclea has served to put them in groups as exact as the present-known coins permit, coins assembled from the chief collections of Europe and America. These groups will doubtless change position with the further findings of Archaeology and the addition of fresh combinations of dies. The task that remains for the future is to correlate the history and the coin-sequences of Heraclea with those of neighboring, allied, South Italian towns, and to apply to this broader field the corroboration of hoards. It seems logical, in fact, to look to a monograph which would be devoted to those questions alone. In the coin designated as Heraclea 6, for example, there is an obvious parallel to the Thurium coin bearing a so-called scanning Scylla (cf. Pl. III). The incuse coin of Metapontum which was overstruck and appears here as Heraclea 4a should be taken into account. The facing head of the Croton staters (cf. Pl. III) might be put to good use in solving the perplexity of the like type at Heraclea.

Expectation must be tempered on the other hand by

the result of comparing studies even now available. Mr. Noe's "Thurian Di-staters" should have been more helpful, but the Scylla type which appears on the di-staters shows only slight analogy to the Heracleian staters. With Tarentum and with Croton too, the results are negative, for reasons different but equally valid.

A similar result was seen in the use of Breglia's careful publication, *Due Tesoretti di Monete Greche della Magna Grecia*, Napoli, 1939. The first of these hoards contains five staters of Heraclea, three of them easily identified, but so far as our purpose is concerned, the evidence is negligible.

The arrangement of coins in the scheme which follows is based upon a minute comparison of dies and the linking of groups by means of a common die occurring in two or more groups. For the sake of clear and simple reference, each type is given a consecutive Arabic number. Each of these numbers then represents a pair of dies. When one of the two dies changes, the numerical designation is changed. Under each number there stands a list of coins struck from that pair of dies. These coins are designated by letters of the alphabet, and a representative one, the first on the list, illustrated. Thus the notation 1:a-k means that there are eleven coins from one pair of dies, while 2 d indicates the fourth coin of the second combination of dies. A glance at the brief description will then show that the obverse die of 1 and 2 is the same. This procedure does not vary throughout the tabulation.

In the enumeration of coins the designation of the collection or catalogue is deliberately brief. Besides the coins in the British Museum Catalogue, there are in the British Museum later unnumbered acquisitions.

In Cambridge the Fitzwilliam Museum has, besides the McClean Bequest, several staters under the names of the Young Bequest, the De Pass, and the Leake collections. Corpus Christi College holds the Lewes collection. Dr. Lloyd's fine collection too was examined at his home in Cambridge.

The separate collections in the Museo Nazionale in Naples appear as (1) Naples 2202–2226, the coins which appear in the *Catalogo del Museo Nazionale di Napoli*, and (2) Santangelo 3452–3503, the pieces in the Fiorelli catalogue of December 4, 1866.

In Paris the coins in the Bibliothèque Nationale are referred to as (1) Paris; (2) Rothschild; (3) Luynes (the collection of the Duc de Luynes).

The Bibliothèque Royale in Brussels furnished five examples, designated as Brussels; and it was there that the four staters of The Hague were first mentioned. Glasgow is responsible for the Hunter collection.

No attempt has been made to include coins from collections or catalogues which could not supply either casts or accurate photographs. The numbers of the Berlin pieces do not in every case agree with the *Beschreibung* numbers, since the descriptions unverified by photographs do not permit exact identification.

DESCRIPTIONS

1. *Obv.* Head of Athena, r., adorned with wreath of olive; hair bound in a knot with upturned ends; background, aegis with intertwined serpents.

Rev. ΗΡΑΚΛΕΙΩΝ. Heracles, naked, half-reclining on seat covered with lion's skin, holding a small one-handled jug in outstretched right hand; at his left hand, club; beneath it, a shell.

a.	B. M. Catalogue 15	-	PLATE 1	-	7.78
b.	Paris, Luynes 422	-	-	-	7.80
c.	Jameson Cat. 232	-	-	-	7.84
	ex Ashburnham 10				
d.	Lloyd, Sylloge 268	-	-	-	7.55
e.	Newell	-	-	-	7.61
f.	Naples, 2222	-	-	-	—
g.	Naples, Santangelo 3493	-	-	-	—
h.	Naples, Santangelo 3494	-	-	-	—
i.	Lockett, Sylloge 343	-	-	-	7.27
j.	Ratto 1909, 845	-	-	-	7.48
	ex Maddalena 323				
k.	Hirsch XXVI, 18	-	-	-	7.27

2. *Obv.* Same die as above.

Rev. Type as for No. 1. Club at different angle.

a.	Naville XVI, 127	-	PLATE 1	-	7.57
b.	Berlin	-	-	-	7.36
c.	Berlin	-	-	-	7.59
d.	The Hague	-	-	-	7.03

3. *Obv.* Head of Athena r., wearing crested Athenian helmet adorned with sea-horse with rounded, curling wing.

OF HERACLEA LUCANIAE 19

Rev. ΗΡΑΚΛΕΙ—. Heracles struggling with lion; in l. field, club and shell.

- a. Paris, Luynes 423 - - PLATE I - 7.87
- b. Newell - - - - - 7.71

4. *Obv.* Similar to No. 3. Sea-horse with straight, pointed wing.

Rev. ΗΡΑΚΛΕΙΩΝ. Similar, but with bow and club at left.

- a. Berlin* - - - - - PLATE I - 7.91
- b. Berlin - - - - - —.
- c. Sotheby 1909, 39 (Benson) - - 7.64

5. *Obv.* Die of No. 4.

Rev. Similar to No. 4.

- a. Copenhagen - - - PLATE I - 7.63
- b. Newell - - - - - 7.53
- c. Ratto 1926, 424 - - - 7.21
- d. H. E. Ives - - - - - 7.50

6. *Obv.* Head of Athena to r. ΓΟ below neck. Helmet adorned with a Scylla, left arm bent to her head, the right at side.

Rev. ΗΡΑΚΛΕΩΝ. Club and shell at left.

- a. Newell - - - - - PLATE I - 7.56
- b. Cambridge, McClean 819 - - - 7.55
- c. Naples, Santangelo 3458 - - - —.
- d. Naples, Santangelo 3459 - - - —.

7. *Obv.* Die of No. 6.

Rev. Inscription almost indistinguishable.†

*This piece was struck over an incuse coin, presumably one of Metapontum.

†The inscription is given in the Berlin *Beschreibung* as: . . PA-KAHION.

20 THE EARLIER STATERS

Heracles, holding club in r. hand and half-kneeling, grapples with the lion. In exergue, quiver and bow.

a. Berlin - - - - - 7.97

8. *Obv.* Σ beneath chin. Helmet adorned with griffin having curling, pointed wing. Athena's hair without knot as heretofore.

Rev. ΗΡΑΚΕΙΩΝ. ΕΥ above exergue. Heracles, kneeling, with club in r. hand, grapples with the lion. Ear of grain in exergue.

a. Berlin - - - - - PLATE I - 7.96
 b. Newell - - - - - 7.69
 c. Paris, Luynes 421 - - - - - 7.85
 d. Jameson Cat. 1861 - - - - - 7.97
 e. Vienna - - - - - —
 f. The Hague, Six 1 - - - - - —

9. *Obv.* Die of No. 8.

Rev. ΗΡΑΚΛΙΩΝ. Heracles, standing, grapples with the lion. At left, quiver; beneath it, the club and bow intertwined.

a. Berlin - - - - - PLATE I - 7.94
 b. Naples, Santangelo 3457 - - - - - —

10. *Obv.* Die of Nos. 8—9.

Rev. ΗΡΑΚΛΕ—. Similar to No. 9. At left, ear of grain and club.

a. Berlin - - - - - PLATE I - 7.80
 b. B. M. - - - - - 7.7
 c. H. A. Greene - - - - - —
 d. Lloyd, Sylloge 269 - - - - - 7.45
 e. Berlin - - - - - 7.50
 f. Caprotti 1910, 175 - - - - - 7.

- g. Hirsch XXXIII, 120 - - - - 7.60
 h. Naville XIII, 68 - - - - 7.94
 ex Hirsch XXVI, 19
 and Hirsch XXXIV, 39

11. *Obv.* Die of Nos. 8-10.

Rev. ΗΡΑΚΛΕΙΩΝ. Similar to Nos. 9-10

in type. At left, club.

- a. Brussels - - - - PLATE I - —
 b. Berlin - - - - - - - —

12. *Obv.* Die of Nos. 8-11.

Rev. Retrograde inscription, ΗΡΑΚΛΕΙΩΝ
 in l. field. On exergual line, ΕΥΦΡΟ.* At left, club.

- a. Berlin - - - - PLATE I - —
 b. Imhoof-Blumer, *Choix* 254 - - —

13. *Obv.* Head of Athena, r., wearing crested helmet adorned with a Scylla whose right arm is upraised and the left balancing a rudder over her shoulder.

Rev. Die of No. 12.

- a. Berlin - - - - PLATE 2 - 7.02
 b. Newell - - - - - - - 7.55
 c. Schlessinger Sale, 1935, 65 (Hermitage) - - - - - 8.3

14. *Obv.* Die of No. 13.

Rev. Die of No. 10.

- a. Cambridge, McClean 820 PLATE 2 7.73
 ex Strozzi 960
 b. Naples, Santangelo 3462 - - - —

* The *Beschreibung* indicates that the fifth letter is questionable, but on 13 b the O is reasonably certain.

15. *Obv.* Similar to No. 3. Helmet adorned with sea-horse with rounded, curling wing.

Rev. ΗΡΑΚΛΕΙΩΝ. In field to l., club and W (Σ sidewise).

- | | | |
|-----------------------|-------------|------|
| a. B. M. Catalogue 13 | - PLATE 2 - | 7.55 |
| b. Copenhagen | - - - - - | 7.29 |
| c. Jameson Cat. 239 | - - - - - | 7.90 |
| ex Strozzi 1907, 958 | | |

16. *Obv.* Die of No. 15.

Rev. Ι ΗΡΑΚΛΕΙΩΝ. In field to l., club and bow, and ear of grain with stem and leaf.

- | | | | |
|----------------------------|-----------|-------------|------|
| a. Paris | - - - - - | - PLATE 2 - | — |
| b. Berlin | - - - - - | - - - - - | — |
| c. Berlin | - - - - - | - - - - - | — |
| d. Cambridge, McClean 818* | - - | - | 7.46 |
| ex Strozzi 959 | | | |

17. *Obv.* This die is possibly a recutting of the obverse die of Nos. 15 and 16.

Rev. ΗΡΑΚΛΕΙΩΝ. In field to l., club and bow; between feet, above exergual line, Φ.

- | | | | |
|-----------------|-------|-------------|---|
| a. W. G. Beatty | - - - | - PLATE 2 - | — |
|-----------------|-------|-------------|---|

18. *Obv.* Helmet adorned with sea-horse with pointed, slightly-curling wing. In field behind, Ξ.

Rev. Die of No. 17.

- | | | |
|--------------------------------|-------------|------|
| a. B. M. Catalogue 12 | - PLATE 2 - | 7.13 |
| b. E. P. Robinson | - - - - - | 6.61 |
| c. Paris, Luynes 424 | - - - - - | 7.88 |
| d. Schlessinger Sale, 1935, 64 | - - | 8.00 |

* The reverses of c and d show the extension of an already serious fracture.

19. *Obv.* Helmet adorned with Scylla with up-
raised arm. In minute letters along the base-line of
the crest, ΑΡΙΣΤΟΞΕ[ΝΟΣ]. At back of neck, Α.

Rev. Die of Nos. 17 and 18.

a. Newell - - - - - PLATE 2 - 7.53

20. *Obv.* Die of No. 19.

Rev. ΗΡΑ ΚΛΕΙΩΝ. On exergual line,
ΑΡΙΣΤΟΞΕ.

a. Newell - - - - - PLATE 2 - 7.35

b. Berlin - - - - - —

c. Trade - - - - - —

d. Jameson Cat. 234 - - - - - 7.56

e. Trade - - - - - —

f. Lloyd, Sylloge 271 - - - - - 7.47

g. The Hague, Six 2 - - - - - —

21. *Obv.* Head of Athena, three-quarters facing,
wearing crested helmet and necklace of beads.

Rev. ΗΡΑΚΛΕΩΝ. In field to l., club
and bow.

a. Munich - - - - - PLATE 2 - 7.46

b. Berlin - - - - - 7.49

c. Berlin - - - - - 7.32

d. Vienna - - - - - —

e. Vienna - - - - - —

f. Naples, Santangelo 3495 - - - —

g. Sotheby 1907, 27 (Bachelor) - - 7.48
ex Hirsch XIV, 75

h. Rollin 1908, 42 (fourrée) - - - 6.90
ex Hirsch XV, 514

i. Hartwig 1910, 197 - - - - - 7.46

22. *Obv.* Same type as No. 21.

Rev. —ΑΚΛΗΙ—

- a. Paris, Luynes 426 - - PLATE 2 - 7.45
 b. Munich - - - - - 7.64

23. *Obv.* Die of No. 22.

Rev. ΗΠΑΚΛΗΙ ΩΝ. Heracles, facing,
 brandishes club in right hand as his left engages the lion.

- a. B. M. Catalogue 27 - PLATE 2 - 7.84
 b. Berlin - - - - - 7.71
 c. Berlin - - - - - —
 d. Lloyd, Sylloge 270 - - - - 7.27
 e. Newell ex Hirsch XV, 515 - - 7.34
 f. Glasgow, Hunter 8 - - - - 7.84
 g. The Hague, Six 3 - - - - —

24. *Obv.* Head of Athena, facing l., wearing helmet adorned with Scylla, her right hand raised to forehead, the left, akimbo.

Rev. ΗΠΑΚΛΗΙΩΝ. Similar to No. 22.
 At left, A. In l. field, bow; beneath it, club.

- a. Naville XVI, 128 - - PLATE 3 - 7.84
 ex Pozzi, 147
 and Hirsch XX, 46
 and Well Known Amateur, 47
 b. Berlin* - - - - - 7.79
 c. Munich - - - - - 7.74

25. *Obv.* ΑΘΑΝΑΣ. Head of Pallas, r., helmet adorned with Scylla holding rock (?) in upraised r. hand.

Rev. ΗΠΑΚΛΕΙΩΝ. In l. field, bow; beneath it, and touching, club.

* This piece is engraved on the title page of Mazochius' "IN . . . TABULAS HERACLEENSES" published in 1754. Cf. *Beschreibung*, p. 322.

- a. Lloyd, Sylloge 273 - - PLATE 3 - 7.63
 b. Newell - - - - - 7.60
 c. Vienna - - - - - —
 d. B. M. - - - - - 7.77
 e. Lockett, Sylloge 344 - - - - 7.58
 f. Sambon 1923, 103 - - - - 6.75
 ex Merzbacher 1909, 2221

26. *Obv.* Die of No. 25.

Rev. ΗΡΑΚΛΗΙΩΝ. Club and bow in l. field.

- a. Berlin - - - - - PLATE 3 - 7.60
 b. Naples, Santangelo 3456 - - - —

27. *Obv.* No inscription. Behind neck, X. Hair bound in a knot beneath neckpiece of helmet—cf. types of Nos. 3–7. Scylla holds rudder as on Nos. 13–14. Border of dots.

Rev. Die of No. 26.

- a. Cambridge, McClean 821 PLATE 3 7.37

28. *Obv.* Die of No. 27.

Rev. ΗΡΑΚΛΕΙΩΝ. In l. field, two-handled cup; beneath it, club.

- a. Berlin - - - - - PLATE 3 - —
 b. Newell - - - - - 7.35
 c. Munich - - - - - 7.72

29. *Obv.* The figure of Scylla is stocky and rather masculine in character. Her l. hand projects prominently above the peak of the helmet. The cast gives the effect of a crescent behind her head.

Rev. ΗΡΑΚΛΕΙΩΝ. At l., E P (retrograde), shell; beneath it, club.

a. Berlin	- - - - -	PLATE 3	-	—
b. B. M. Catalogue 14	- - - - -			7.57
c. Paris	- - - - -			—
d. Naville XV, 133	- - - - -			7.9
ex Feuardent 1913, 25				
and Butler, 1911, 50				
e. Cambridge, McClean 823	- - -			7.75
ex Benson Sale 41				
f. Cambridge, McClean 822	- - -			7.46
g. Newell	- - - - -			7.75
h. The Hague 514	- - - - -			7.02
i. Ratto 1912, 237	- - - - -			7.71
ex Feuardent, 1910, 61				

30. *Obv.* Die of No. 29.

Rev. ΗΡΑΚΛΗΩΝ. In l. field, shell; beneath it, club and bow.

a. Berlin	- - - - -	PLATE 3	-	—
b. Glasgow, Hunter 6	- - - - -			7.7
c. Newell	- - - - -			7.57
d. Vienna	- - - - -			—
e. Vienna	- - - - -			—
f. Trade	- - - - -			—

31. *Obv.* The Scylla on the helmet holds the left arm outstretched, the right, akimbo. The right hand holds a short staff.

Rev. ΗΡΑΚΛΑ. . . . Heracles, standing, grapples with the lion. In field, club.

a. Paris, Rothschild	- -	PLATE 3	-	—
b. Berlin	- - - - -			7.94
c. Newell	- - - - -			7.33
d. Paris	- - - - -			—

32. *Obv.* Athena with unbound curling hair and wearing a slender earring. Scylla, with both arms

outstretched, is apparently hurling a rock. Border of dots.* In front of head, Δ K Φ.

Rev. ΗΡΑΚΛΗΙΩΝ. ΚΑΛ. Above exergual line between the feet of Heracles, owl.

- | | | | | | |
|----|--------------------------------|---------|---------|---|------|
| a. | Paris, Luynes 425 | - - | PLATE 4 | - | 7.80 |
| b. | W. G. Beatty | - - - - | - - | - | — |
| c. | Berlin | - - - - | - - | - | — |
| d. | Copenhagen | - - - - | - - | - | 6.62 |
| e. | Naples, Santangelo 3453 | - - - | - | - | — |
| f. | Vienna | - - - - | - - | - | — |
| g. | Naville XVI, 130 | - - - - | - - | - | 7.63 |
| | ex Naville VI, 137 | | | | |
| | and Hirsch XXVI, 219 | | | | |
| h. | Carfrae Sale, Sotheby 1894, 10 | - | - | - | 7.2 |

33. *Obv.* Similar to No. 32. Triple-pendant earring.

Rev. Die of No. 32.

- | | | | | | | |
|----|-------|---------|---|---------|---|---|
| a. | Paris | - - - - | - | PLATE 4 | - | — |
|----|-------|---------|---|---------|---|---|

34. *Obv.* Die of No. 33.

Rev. Same type as Nos. 32–33.

- | | | | |
|----|-------------------------|---------|------|
| a. | Taranto, Carosino Hoard | PLATE 4 | 7.79 |
| b. | Berlin | - - - - | — |

35. *Obv.* Same type as Nos. 32–34.

Rev. Die of Nos. 32 and 33.

- | | | | | | | |
|----|--------|---------|---|---------|---|------|
| a. | Berlin | - - - - | - | PLATE 4 | - | 7.50 |
|----|--------|---------|---|---------|---|------|

36. *Obv.* Die of No. 35.

Rev. Similar to No. 33.

* This beaded circle framing the head of Athena, although frequently off-flan or removed by cleaning, seems always to be present from this point.

- a. Cambridge, Leake - - PLATE 4 - 7.79
- b. Naples, Santangelo 3452 - - - —
- c. Naples, Santangelo 3455 - - - —

37. *Obv.* Die of Nos. 35–36.

Rev. Similar to No. 33.

- a. Naples, Santangelo 3454 PLATE 4 —

38. *Obv.* Similar to Nos. 35–37.

Rev. Die of No. 37.

- a. Cambridge, McClean 824 PLATE 4 7.76
- b. Paris - - - - - —
- c. Naville XII, 365 - - - - - 7.62
- d. Berlin - - - - - —
- e. Newell - - - - - 7.62
ex Hess 1902, 277
and Naville XII, 365
- f. Newell - - - - - 7.82
ex Hartwig 196
and de Sartiges 28
- g. Metropolitan Mus., Ward 44 - 7.79

39. *Obv.* Die of No 38.

Rev. Similar to No. 38.

- a. Brussels - - - - - PLATE 4 - —
- b. Naville XIV, 28 - - - - - 7.61
ex Benson 40
and Montagu 34
- c. B. M. Catalogue 28 - - - - - 7.77
- d. Lloyd, Sylloge 272 - - - - - 7.55
- e. Naville XVI, 129 - - - - - 7.38
ex Naville X, 54
and Pozzi, 148
and Sambon Canessa 1927, 273
and Hirsch XI, 35

- f. Collignon 1919, 28 - - - - -.—
 ex v. Wotoch Sale, 1901, 95
 g. Luneau 104 - - - - -.—

40. *Obv.* Same type as No. 39, and with same (?) letters. The flap of the helmet is decorated with a palmette.

Rev. Die of No. 39.

- a. The Hague, 513 - - PLATE 4 - 7.00

41. *Obv.* Die of No. 40.

Rev. Same type as No. 40.

- a. Vienna - - - - - PLATE 4 - —.

42. *Obv.* Die of No. 41.

Rev. Same type as No. 41.

- a. Vienna - - - - - PLATE 4 - —.
 b. Copenhagen - - - - - 6.66

43. *Obv.* Same type. The design of the earring is peculiar to this coin, three uniform pendants in even alignment.

Rev. Similar to No. 42.

- a. Newell - - - - - PLATE 4 - 7.93
 ex Hirsch XXXI, 34

44. *Obv.* Similar to No. 43.

Rev. Die of No. 43.

- a. Hirsch XXXIII, 121 - - - - 8.20
 b. Hirsch XXXIII, 122 - - - - 8.10

45. *Obv.* The head of Pallas is of smaller proportions. In r. field, EY.

Rev. The owl between the feet of Heracles is here replaced by a one-handled, fluted jug.

a. Naples, Santangelo 3461 PLATE 4 —.—

46. *Obv.* Die of No. 45.

Rev. ΗΡΑΚΛΗΙΩΝ. Similar to No. 45.

a. Cambridge, McClean 825 PLATE 5 7.05

b. Newell - - - - - 7.75

ex Sambon Sale, 1927, 274

c. Naville VI, 138 - - - - - 7.58

d. Vienna - - - - - —.—

e. Helbing, March 1928, 34 - - - 7.7

ex Hirsch XXX, 145

and Nervegna 431

f. Naville V, 410 - - - - - 7.46

47. *Obv.* Die of Nos. 45-46.

Rev. Similar to No. 45.

a. Berlin - - - - - PLATE 5 - —.—

b. Glasgow, Hunter 7 - - - - - 7.69

c. Paris - - - - - —.—

d. Naples 2205 - - - - - —.—

e. Naples 2206 - - - - - —.—

f. Naville XVI, 131 - - - - - 7.93

ex Locker Lampson 16

and Sir H. Weber 706

g. Sambon 1927, 274 - - - - - 7.70

h. Sambon 1907, 26 - - - - - —.—

i. Maddalena 1903, 324 - - - - - —.—

j. Naville V, 410 - - - - - 7.46

ex Sotheby 1907, 26 (Bachelor)

48. *Obv.* Similar to No. 45. Inscription on r., ΕΥΘΥ.

Rev. Same type.

- a. B. M. - - - - - PLATE 5 - 7.95
 b. Sir H. Weber 705 - - - - - 7.95

49. *Obv.* Similar type. A palmette adorns neck-piece of helmet. In front of forehead, K.

Rev. The ethnic, to r., is off-flan except on d, where it is illegible. Heracles, standing, holds lion's pelt over left arm; in his l. hand, a bow. The right hand grasps club. At l., Nike, flying r., extends crown. In l. field, AA; in r. field, Σ. This type, save for changes in accompanying symbol and inscription, continues in use unchanged for the full-weight issues.

- a. B. M. - - - - - PLATE 5 - 7.69
 b. B. M. Catalogue 30 - - - - - 7.87
 c. Naples 2204 - - - - - —
 d. Cambridge, Coates 2787 - - - - - —

50. *Obv.* Die of No. 49.

Rev. ΗΡΑΚΛ[ΗΙΩΝ] on r. ΕΥΦ to l. of club, and reading upward.

- a. Naville IV, 59 - - - - - PLATE 5 - 7.72
 b. Copenhagen - - - - - 7.93

51. *Obv.* Die of Nos. 49 and 50.

Rev. Similar to No. 49—Nike larger in scale. Inscription, ΗΡΑΚΛΗΙΩΝ. Cf. 52a.

- a. Naville XII, 367 - - - - - PLATE 5 - 7.73
 b. B. M. - - - - - 7.20
 c. Berlin - - - - - —
 d. Paris, Luynes 427 - - - - - 7.82
 e. Ratto 1926, 428 - - - - - 7.65
 f. Hamburger, May 1929, 39 - - - - - 7.80
 g. Paris, Rothschild - - - - - —

52. *Obv.* Similar to No. 49—probably same die in worn condition.

Rev. Die of No. 51.

a. Berlin - - - - - PLATE 5 - —

b. Naples, Santangelo 3464 - - - —

53. *Obv.* Die of No. 52—note earring elongated by die-break.

Rev. Die of No. 50.

a. Cambridge, Leake - - PLATE 5 - 8.00

54. *Obv.* Die of Nos. 52–53.

Rev. Similar to No. 49.

a. Newell - - - - - PLATE 5 - 7.97

b. Glasgow, Hunter 9 - - - - 7.77

55. *Obv.* Similar to No. 49.

Rev. Similar to No. 49.

a. Naples, Santangelo 3463 PLATE 5 —

56. *Obv.* No inscription. The head of Athena is of smaller proportions; and the neckpiece of the helmet without adornment.

Rev. Die of No. 54.

a. Lockett, Sylloge 345 - PLATE 5 - 7.98

57. *Obv.* ΗΡΑΚΛΗΙΩΝ. Head of Athena with Corinthian helmet adorned with a Scylla, markedly reduced in scale.

Rev. ΗΡΑΚΛΗΙΩΝ to r. ΑΘΑ to l. of club, reading downward. Type of No. 56, with the addition of a one-handled jug in field, right.

a.	W. G. Beatty	-	-	-	PLATE 5	-	—
b.	Newell	-	-	-	-	-	7.93
	ex Benson Sale 42						
c.	Cambridge, Lewes 269	-	-	-	-	-	—
d.	Trade	-	-	-	-	-	—
e.	Naville VI, 141	-	-	-	-	-	7.95
f.	Naples 2208	-	-	-	-	-	—
g.	Naples, Santangelo 3485	-	-	-	-	-	—
h.	Vienna	-	-	-	-	-	—

58. *Obv.* Die of No. 57.

Rev. AΘA to l. of club. In l. field above end of club, large, one-handled jug.

a.	B. M. Catalogue 36	-	PLATE 6	-	7.94
b.	Newell	-	-	-	6.92
c.	Lloyd, Sylloge 275	-	-	-	7.82
d.	Cambridge, Leake	-	-	-	7.94

59. *Obv.* Die of No. 57.

Rev. Similar to No. 58. Jug smaller in scale.

a.	Vienna	-	-	-	PLATE 6	-	—
----	--------	---	---	---	---------	---	---

60. *Obv.* Die of No. 57.

Rev. Similar to Nos. 58–59.

a.	Brussels	-	-	-	PLATE 6	-	—
b.	Cambridge, McClean 850	-	-	-	-	-	7.58
c.	Naples, Santangelo 3470	-	-	-	-	-	—

61. *Obv.* Die of No. 57.

Rev. ΗΡΑΚΛΗΙΩΝ to r. Similar to No. 57.

a.	Berlin	-	-	-	PLATE 6	-	—
----	--------	---	---	---	---------	---	---

62. *Obv.* Reading of ethnic, which terminates at peak of the helmet, not certain, but apparently as on No. 60. Behind neck, K.

Rev. Die of No. 61.

- a. Naville XV, 137 - - PLATE 6 - 7.83
- b. Naples, Santangelo 3475 - - - - - —
- c. The Hague 515 - - - - - 7.8

63. *Obv.* Die of No. 62.

Rev. AΘA. ΗΠΑΚΛΗΙΩΝ. Same type.

- a. Paris, Luynes 430 - - PLATE 6 - 7.96
- b. Naville XV, 135 - - - - - 8.01
- c. Berlin - - - - - —
- d. Brussels - - - - - —
- e. Hamburger 1929, 49 - - - - - —

64. *Obv.* Similar to No. 62.

Rev. Similar to No. 63.

- a. Mrs. George P. Cammann PLATE 6 7.97
- b. Berlin - - - - - —
- c. Naville I, 151 - - - - - 7.72

65. *Obv.* Die of No. 64.

Rev. Similar to No. 64—differences in the details of the lion's skin.

- a. Munich - - - - - PLATE 6 - 7.74
- b. Vienna - - - - - —
- c. Naples 2210 - - - - - —
- d. Naples, Santangelo 3468 - - - - - —

66. *Obv.* Die of No. 64.

Rev. Similar to No. 65.

- a. Naville XII, 369 - - PLATE 6 - 7.92

67. *Obv.* Die of No. 64.

Rev. Type unchanged.

- a. Ravel - - - - - PLATE 6 - —
- b. Cambridge, Lewes 460 A - - - 7.45
- c. Schlessinger Sale, 1935, 68 - - 7.8

68. *Obv.* Die of No. 64.

Rev. Similar to No. 67.

a. Cambridge, McClean 852 PLATE 6 - 7.78

69. *Obv.* Die of No. 64.

Rev. Similar to No. 68.

a. Oxford, Ashmolean - PLATE 6 - 7.80

70. *Obv.* Similar to Nos. 64-69; the inscription in smaller letters.

Rev. Similar to No. 69.

a. Berlin - - - - - PLATE 7 - --.—

b. Naples, Santangelo 3474 - - - - - --.—

c. Naples, Santangelo 3476 - - - - - --.—

d. Naples, Santangelo 3477 - - - - - --.—

71. *Obv.* Die of No. 70.

Rev. Similar to No. 70.

a. Berlin - - - - - PLATE 7 - --.—

72. *Obv.* Die of No. 70.

Rev. Die of No. 66.

a. Naville V, 412 - - - - - PLATE 7 - 7.90

b. Paris - - - - - --.—

73. *Obv.* Die of No. 70.

Rev. Die of Nos. 71 and 74.

a. Glasgow, Hunter 12 - PLATE 7 - 7.52

b. Cambridge, McClean 848 - - - 7.89

74. *Obv.* Similar to No. 73.

Rev. Die of Nos. 71 and 73.

a. Cambridge, Coates 2788 PLATE 7 --.—

b. Naples 2209 - - - - - --.—

- c. Naples, Santangelo 3471 - - - - .—
 d. Hamburger 1930, 566 - - - - 7.63
 e. Hirsch XXXIII, 124 - - - - 7.50

75. *Obv.* Die of No. 74.

Rev. Die of No. 70.

- a. B. M. Catalogue 33 - PLATE 7 - 7.89

76. *Obv.* Die of No. 74.

Rev. Similar to No. 75.

- a. Cambridge, De Pass - PLATE 7 - 7.86
 b. Cambridge, Young Bequest, 1936 8.00
 c. Naville VI, 139 - - - - 7.86
 d. Naples, Santangelo 3478 - - - - .—

77. *Obv.* Die of No. 74.

Rev. Similar to No. 76.

- a. B. M. Catalogue 37 - PLATE 7 - 7.91
 b. Vienna 56 - - - - .—
 c. Newell - - - - 7.71
 . ex Hirsch XXIX, 45
 d. Schlessinger Sale, 1935, 69 - - 7.7

78. *Obv.* Die of No. 74.

Rev. Similar to No. 77.

- a. Naville V, 414 - - - PLATE 7 - 7.68

79. *Obv.* Similar to No. 78.

Rev. Die of No. 77.

- a. Copenhagen - - - PLATE 7 - 6.48

80. *Obv.* Similar to No. 79. Die common to
 Nos. 80-82.

Rev. Similar to No. 79.

- a. B. M. Catalogue 35 - PLATE 7 - 7.87
- b. Vienna - - - - - —
- c. Naville XV, 136 - - - - - 7.85
- d. Lloyd, Sylloge 276 - - - - - 7.85
- e. Naples, Santangelo 3469 - - - - - —
- f. Naples, Santangelo 3472 - - - - - —

81. *Obv.* Die of No. 80.

Rev. Similar to No. 80.

- a. Cambridge, McClean 847 PLATE 7 8.01
- b. Naville VI, 140 - - - - - 7.87
- c. Paris - - - - - —
- d. Paris - - - - - —

82. *Obv.* Die of No. 80.

Rev. Similar to No. 81.

- a. Naples, Santangelo 3473 PLATE 7 —
- b. Oxford, Ashmolean - - - - - 7.74

83. *Obv.* Similar to No. 82.

Rev. Die of No. 82.

- a. Oxford, Ashmolean - PLATE 7 - 7.71
- b. Munich - - - - - 7.90

84. *Obv.* Same type. K, but ethnic lacking.

Rev. Similar to No. 83.

- a. Oxford, Ashmolean - PLATE 7 - 7.28
- b. Naples 2211 - - - - - —

85. *Obv.* ΗΡΑΚΛΗΙΩΝ—the last letter below the peak of the helmet. Behind the neck, E.

Rev. Similar to No. 84. Owl in field at 1.

ΑΡΙΣ parallel with club, and reading upwards.

- a. Berlin - - - - - PLATE 8 - —

86. *Obv.* Die of No. 85.

Rev. Type of No. 85.

- a. Newell - - - - PLATE 8 - 7.86
ex Sotheby Sale, 1920, 10
- b. Paris - - - - - - - - - - —
- c. American Numismatic Society - 7.32

87. *Obv.* Die of Nos. 85–86.

Rev. Type of No. 85—the owl smaller in scale.

- a. Naples 2212 - - - PLATE 8 - —

88. *Obv.* Similar to No. 85.

Rev. Die of No. 86.

- a. Naville X, 55 - - - PLATE 8 - 7.90
ex Naville IV, 160
- b. Berlin - - - - - - - - - - —

89. *Obv.* Die of No. 88.

Rev. Similar to No. 88.

- a. E. P. Robinson 468 - PLATE 8 - 7.70

90. *Obv.* Similar to No. 89.

Rev. Similar to No. 88—the owl is larger.

- a. Cambridge, McClean 845 PLATE 8 7.64
- b. Vienna - - - - - - - - - - —
- c. Vienna - - - - - - - - - - —
- d. Schlessinger Sale, 1935, 67 - - 7.0

91. *Obv.* Similar to No. 85.

Rev. Similar to No. 89.

- a. B. M. Catalogue 31 - PLATE 8 - 7.72
- b. Berlin - - - - - - - - - - —
- c. Naples 2213 - - - - - - - - - - —

OF HERACLEA LUCANIAE 39

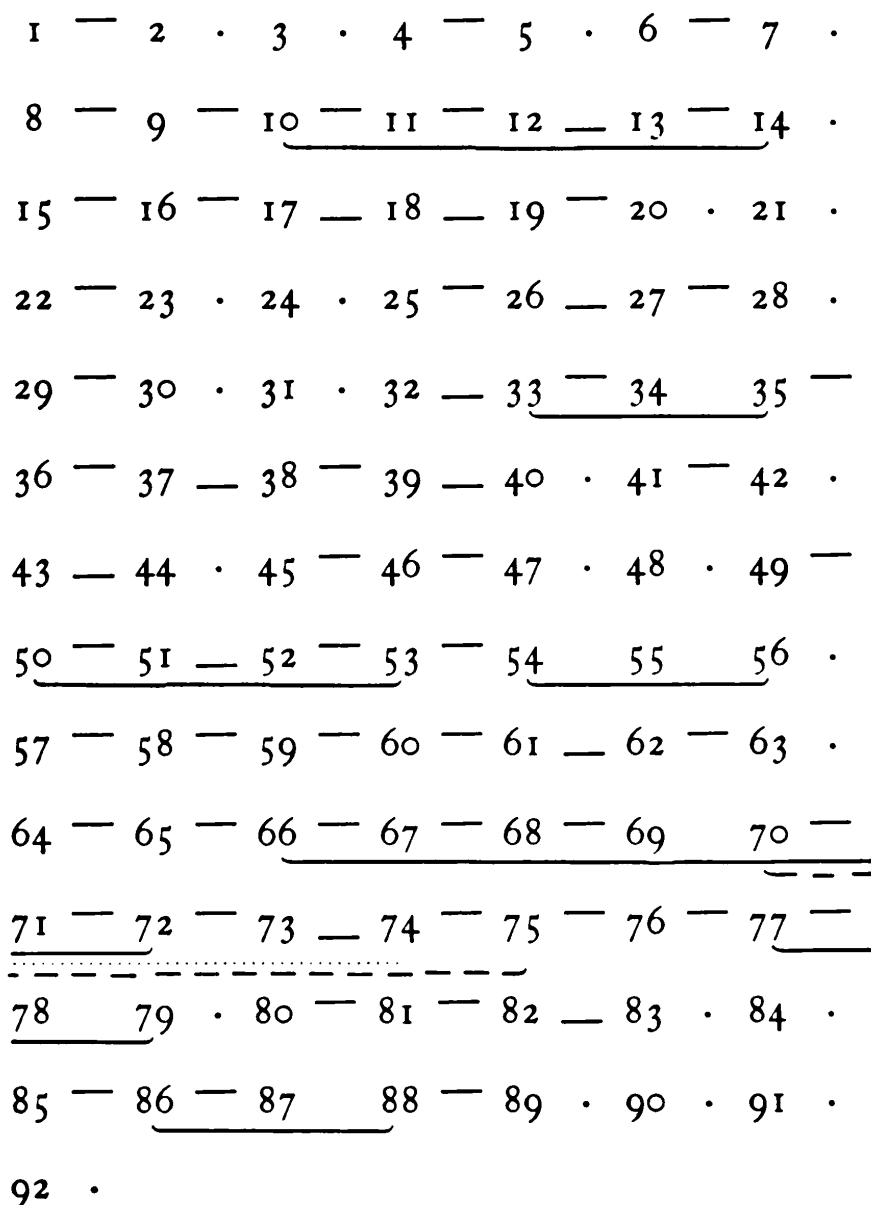
- d. Naples, Santangelo 3479 - - - - —
 e. Glasgow, Hunter 11 - - - - 7.81

92. *Obv.* Similar to No. 91.

Rev. Similar to No. 89.

- a. Vienna - - - - - PLATE 8 - —
 b. Naville V, 411 - - - - - 7.57
 c. Glasgow, Hunter 10 - - - - - 7.54

Diagram of the relationship of obverse and reverse dies within the ninety-two varieties. Identity of obverse dies is indicated as with Nos. 1 and 2—for reverses, as with Nos. 17 and 18. A median period shows the absence of any known die-connections between groups.



PLATES



HERACLEA



1.



2.



3.



7.



8.



9.



PLATE I



4.



5.



6.



10.



11.



12.



HERACLEA



13.



14.



15.



19.



20.



21.



PLATE II



16.



17.



18.



22.



23.



A-B.



HERACLEA



A.



B.



C.



26.



27.



28.



PLATE III



D.



24.



25.



29.



30.



31.



HERACLEA



32.



33.



34.



38.



39.



40.



41.



PLATE IV



35.



36.



37.



42.



43.



45.



HERACLEA



1.



2.



3.



7.



8.



9.



PLATE I



4.



5.



6.



10.



11.



12.



HERACLEA



13.



14.



15.



19.



20.



21.



PLATE II



16.



17.



18.



22.



23.



A-B.



HERACLEA



A.



B.



C.



26.



27.



28.



PLATE III



D.



24.



25.



29.



30.



31.



HERACLEA



32.



33.



34.



38.



39.



40.



41.



PLATE IV



35.



36.



37.



42.



43.



45.



HERACLEA



1.



2.



3.



7.



8.



9.



PLATE I



4.



5.



6.



10.



11.



12.



HERACLEA



13.



14.



15.



19.



20.



21.



PLATE II



16.



17.



18.



22.



23.



A-B.



HERACLEA



A.



B.



C.



26.



27.



28.



PLATE III



D.



24.



25.



29.



30.



31.



HERACLEA



32.



33.



34.



38.



39.



40.



41.



PLATE IV



35.



36.



37.



42.



43.



45.



HERACLEA



46.



47.



48.



52.



53.



54.



PLATE V



49.



50.



51.



55.



56.



57.



HERACLEA



58.



59.



60.



64.



65.



66.



PLATE VI



61.



62.



63.



67.



68.



69.



HERACLEA



70.



71.



72.



76.



77.



78.



PLATE VII



73.



74.



75.



79.



80.



81.



HERACLEA



82.



83.



84.



88.



89.



90.



PLATE VIII



85.



86.



87.



91.



92.



A.



CJ
85-
179

AUG 11 1941

NUMISMATIC NOTES
AND MONOGRAPHS

No. 92



A TARSUS COIN COLLECTION IN
THE ADANA MUSEUM

BY
D. H. COX

THE AMERICAN NUMISMATIC SOCIETY
BROADWAY AT 156TH STREET
NEW YORK
1941

PUBLICATIONS

The American Journal of Numismatics, 1866-1920.

Monthly, May, 1866-April, 1870.
Quarterly, July, 1870-October, 1912.
Annually, 1913-1920.

With many plates, illustrations, maps and tables. Less than a half-dozen complete sets of the Journal remain on hand. Price on application.

The numbers necessary to complete broken sets may in most cases be obtained. An index to the first fifty volumes has been issued as part of Volume LI. It may be purchased separately for \$3.00.

The American Numismatic Society. Catalogue of the International Exhibition of Contemporary Medals. March, 1910. New and revised edition. New York. 1911. xxxvi, 412 pages, 512 illustrations. \$3.00.

Numismatic Notes and Monographs

9. David Eugene Smith, LL.D. Computing Jetons. 1921. 70 pp. 25 pls. \$1.50.
10. Edward T. Newell. The First Seleucid Coinage at Tyre. 1921. 40 pp. 8 pls. \$1.00.
12. Howland Wood. Gold Dollars of 1858. 1922. 7 pp. 2 pls. 50c.
13. R. B. Whitehead. Pre-Mohammedan Coinage of N. W. India. 1922. 56 pp. 15 pls. \$2.00.
14. George F. Hill. Attambelos I of Characene. 1922. 12 pp. 3 pls. \$1.00.
15. M. P. Vlasto. Taras Oikistes (A Contribution to Tarentine Numismatics). 1922. 234 pp. 13 pls. \$3.50.
17. Agnes Baldwin. Six Roman Bronze Medallions. 1923. 39 pp. 6 pls. \$1.50.
18. Howland Wood. Tegucigalpa Coinage of 1823. 1923. 16 pp. 2 pls. 50c.
19. Edward T. Newell. Alexander Hoards—II. Demanhur Hoard. 1923. 162 pp. 8 pls. \$2.50.
20. Harrold E. Gillingham. Italian Orders of Chivalry and Medals of Honour. 146 pp. 34 pls. \$2.00.
21. Edward T. Newell. Alexander Hoards—III. Andritsaena. 1924. 39 pp. 6 pls. \$1.00.
22. C. T. Seltman. A Hoard from Side. 1924. 20 pp. 3 pls. \$1.00.
23. R. B. Seager. A Cretan Coin Hoard. 1924. 55 pp. 12 pls. \$2.00.
24. Samuel R. Milbank. The Coinage of Aegina. 1925. 66 pp. 5 pls. \$2.00.
26. Edward T. Newell. Mithradates of Parthia and Hyspaosines of Characene. 1925. 18 pp. 2 pls. 50c.

N U M I S M A T I C
NOTES AND MONOGRAPHS

NUMBER 92

NUMISMATIC NOTES AND MONOGRAPHS
is devoted to essays and treatises on subjects relating to coins, paper money, medals and decorations and is uniform with Hispanic Notes and Monographs published by the Hispanic Society of America, and with Indian Notes and Monographs issued by the Museum of the American Indian—Heye Foundation.

PUBLICATION COMMITTEE

AGNES BALDWIN BRETT, *Chairman*

STEPHEN H. P. PELL

THOMAS O. MABBOTT

EDITORIAL STAFF

SYDNEY PHILIP NOE, *Editor*

SAWYER MCA. MOSSER *Associate Editor*

A TARSUS COIN COLLECTION IN THE ADANA MUSEUM

BY
D. H. COX



THE AMERICAN NUMISMATIC SOCIETY
BROADWAY AT 156TH STREET
NEW YORK
1941

COPYRIGHT 1941 BY
THE AMERICAN NUMISMATIC SOCIETY

THE INTELLIGENCER PRINTING CO.
LANCASTER, PA.

A TARSUS COIN COLLECTION IN THE ADANA MUSEUM

By D. H. Cox

In 1935, while excavating at Tarsus, Miss Hetty Goldman purchased a collection of eight hundred and fifteen coins which she generously presented to the Adana Museum. To Bey R. Yalgin, Director of the Adana Museum, I wish to express my appreciation of his kindness in permitting me to bring these coins to the United States, catalogue them and make casts. Upon examination, a brief publication of the collection seemed desirable. To Mr. E. T. Newell I am indebted for his ever-ready assistance and the use of his collection for comparison. Professor H. M. Hubble of Yale University has contributed explanations of the cryptic letters which appear on so many Cilician coins, stressing the fact that although some of the interpretations seem certain, others are tentative and conjectural. This paper owes much to both of these gentlemen, as well as to the friendly advice of other members of the Yale faculty.

More than six per cent of the collection is silver, largely Roman denarii, and Armenian *tahégans*—the remainder, in copper, ranges in time from Philip II of Macedon to an Austrian kreuzer of 1863. Most of the coins are ancient and from widely scattered parts of the Greek world. There are about fifty Roman pieces, a few from the Peloponnesus, Epirus and Ambracia, as well as fifty-six coins of the Mace-

2 A TARSUS COIN COLLECTION

donian kings, Philip, Alexander, Lysimachus, Cassander and Demetrius Poliorcetes, many of which were struck at Asia Minor mints. There are seventy-five Seleucid coins but only twenty Egyptian, fifteen Ptolemaic and five imperial. From the eastern provinces we have approximately forty coins of Syria (post-Seleucid), thirty from Cappadocia, twenty Phrygian, about fifteen each from Ionia and Pisidia as well as some three hundred from Cilicia. Of these three hundred Cilician pieces one hundred and thirty belong to Tarsus.

The former owner of the collection was in no sense an antiquarian; he bought antiques as an investment. He had no numismatic knowledge; to him the terms "worn," "unfamiliar" and "antique" were practically synonymous. It is, therefore, surprising how much interesting material was found among the coins collected in such a haphazard fashion. The owner told me that he had bought the coins locally, that is, in Tarsus or Mersina. The provenance is of some importance, but one can never be sure whether a coin of Ilium or Macedonia was brought to the shores of Cilicia by a sailor in the first or in the twentieth century.

The collection as a whole need not be described but there are a few new types, new magistrates' names and new dates which should be recorded. Specimens of coins published elsewhere, which by reason of their rarity, preservation or provenance seem worth mentioning, are also included.

Since the coinage of the Macedonian kings,

especially of Alexander and his successors, still presents many numismatic problems, a list of these coins acquired in Tarsus may be useful.

KINGDOM OF MACEDONIA

PHILIP II, 359–336 B. C.

1, 2, 3, 4*, 5. Youthful male head r.

Rev. ΦΙΛΙΠΠΟΥ Horseman to r. Beneath horse: Λ; ♣; Α; dolphin to r. and Α; dolphin to l.

AE. 16–18 mm. PLATE I.

6, 7*. Same type as Nos. 1–5.

Rev. Horseman to l.; Beneath horse, Π (on No. 6) and Ν (No. 7).

AE. 16–18 mm. PLATE I.

8. Heracles head r.

Rev. ΦΙΛΙΠ above, ΠΟΥ beneath club to r.; in exergue, Λ.

AE. 10 mm. Cf. Gaebler, *Antiken Münzen von Makedonia und Paionia*, Abt. 2, p. 168, No. 41.

ALEXANDER III, 336–323 B. C.

Series I

9*, 10, 11, 12. Head of Heracles r. In r. field, caduceus.

Rev. ΑΛΕΞΑΝΔΡΟΥ Above, club r. and below, a quiver. Above club, caduceus; below quiver, a star.

AE. 17–19 mm. Newell, "Tarsos under Alexander," *American Journal of Numismatics*, Vol. LII, 1918, p. 104, No. 46. PLATE I.

4 A TARSUS COIN COLLECTION

13*, 14*, 15. Same as Nos. 9–12, but without symbols.

Rev. Same as Nos. 9–12, but without symbols.

AE. 18–21 mm. PLATE I.

16*. Same as Nos. 13–15.

Rev. Same as Nos. 13–15, but N below quiver.

AE. 19 mm. PLATE I.

17. Same as Nos. 13–15.

Rev. Same as Nos. 13–15, but A below quiver.

AE. 17 mm.

18. Same as Nos. 13–15.

Rev. Same as Nos. 13–15, but A above club.

AE. 18 mm. PLATE I.

19*, 20*, 21. Same as Nos. 13–15.

Rev. Same as Nos. 13–15, but without monograms.

On No. 20, inscription in two lines above and below club.

AE. 12 mm. PLATE I.

Series II.

22*, 23, 24, 25. Same as Nos. 13–15.

Rev. $\text{A}\Lambda\text{E}\text{E}\text{A}\text{N}\Delta\text{P}\text{OY}$ Above, club to r.; below, bow in case. Bunch of grapes and A above club.

AE. 18–19 mm. PLATE I.

26. Same as Nos. 13–15.

Rev. Same as Nos. 22–25, but with bunch of grapes and \odot above club.

AE. 18 mm. PLATE I.

27. Same as Nos. 13–15.

Rev. Same as Nos. 22–25, but with bunch of grapes and N above club.

AE. 19 mm.

The bunch of grapes is a common symbol of the Tarsus tetradrachms of Alexander *c.* 327–324 B. C. (*American Journal of Numismatics*, 1918, p. 98); ☉ appears on the same series, although not combined with the grapes. At Soli, however, the bunch of grapes, as a type, is combined with the letters A and ☉ as well as with the monogram Ν. (See Nos. 129–133 p. 34).

Series III

28*, 29. Same as Nos. 13–15.

Rev. ΑΛΕΞΑΝΔΡΟΥ Above, bow in case l.; below, club r. Below club Α.

AE. 21 and 19 mm. PLATE I.

30. Same as Nos. 13–15.

Rev. Same as Nos. 28–29, but below club Ν.

AE. 17 mm. Attributed to Paphos by Newell: *Numismatic Chronicle*, 1915, p. 318, No. 9.

Series IV

31, 32*. Same as Nos. 13–15.

Rev. ΒΑΣΙΛΕΥΣ above, bow in case to r.; below, club to l.; below club, racing torch.

AE. 19 mm. PLATE I.

Anonymous, circa 316–306 B. C.

33. Macedonian shield, Gorgon's head on boss.

Rev. B. C. Crested Macedonian helmet; in field, l., Ν; r., caduceus.

AE. 16 mm. Gaebler, *Antiken Münzen von Makedonia und Paionia*, Abt. 2, p. 174, No. 6.

6 A TARSUS COIN COLLECTION

34. Same as No. 33.

Rev. Same as No. 33 but in l. field ✠ . (Possibly same monogram as on No. 33 but imperfectly struck.)

AE. 15 mm. Gaebler, *ibid.* Coins of this type, having the caduceus as symbol on the left, and with the monograms £ or ℞ on the right, are attributed to Salamis in Cyprus by E. T. Newell, *Coinages of Demetrius Poliorcetes*, pp. 18, 19.

DEMETRIUS POLIORCETES, 306–283 B. C.

SALAMIS

35. Youthful male head, helmeted r.

Rev. Prow r. above, B A; below, ℞ .

AE. 15–17 mm. Newell, *Coinages of Demetrius Poliorcetes*, p. 25, No. 20. (On four other pieces of this denomination the monogram is off flan.)
PLATE I.

TARSUS

36*, 37, 38, 39. Same as No. 35.

Rev. Prow r. Above, B A; to l., acrostolion; to r., double-axe; below, $\text{Λ} \times$.

AE. 11 and 12 mm. Newell, *loc. cit.*, p. 50, No. 40. PLATE I.

40. Head of Poseidon r.

Rev. Athena Promachus standing r.; inscription illegible; in right field, Λ ; in left field \times .

AE. 12 mm. Newell, *loc. cit.*, p. 50, No. 41.
PLATE I.

41. Nike standing l. on prow.

Rev. ♂ A Poseidon striding l.

AE. 12 mm. Newell, *loc. cit.*, p. 74, No. 62.

PLATE I.

CASSANDER, 316–287 B. C.

42. Helmet r.

Rev. ΒΑΣΙΛΕΩΣ above, ΚΑΣΣΑΝΔΡΟΥ below;
a spearhead to r.

AE. 19 mm. Gaebler, *Antiken Münzen von Makedonia und Paionia*, Abt. 2, p. 177, No. 10.

43. Herakles' head r.

Rev. ΚΑΣΣΑΝ above, ΔΡΟΥ below; lion lying l.

AE. 18 mm. Gaebler, *loc. cit.*, p. 176, No. 1.

PHILIP V, 220–179 B. C.

44. Head of beardless Herakles r., laureate, lion-skin
around neck.

Rev. ΒΑΣΙΛΕΩΣ to r. ΦΙΛΙΠΠΟΥ to l. Athena
Alkis standing r.; star in inner r. field,

AE. 19 mm. Gaebler, *loc. cit.*, p. 194, No. 28.

PLATE I.

PELOPONNESUS

CORINTH

M. Aurelius

45. M AV R AN TONINVS AVG Bust r., laureate.

Rev. CLI COR Melikertes lying on dolphin r. In
background, pine tree; in r. field, wreath; in l. field,
palm branch.

8 A TARSUS COIN COLLECTION

AE. 26 mm. Cf. B. M.C., *Corinth*, p. 78, No. 611.
PLATE I.

PELENE

Septimus Severus

46. Α CEΠ CE BHPOC Π Bust r., laureate.

Rev. ΠΕΛΛΗ ΝΕΩΝ Nike, wings spread, stands facing, head l., wearing radiate crown; a garland held in her outstretched hands.

AE. 22 mm. PLATE I.

PONTUS

ZELA

Caracalla (206/7 A. D.)

47. AVKAIMAVP ANTΩNINOC Head r., laureate.

Rev. ΞΗΛΙΤ ΩΝΤΟΥ[ΠΟΝΤ The Emperor in slow-moving *quadriga* r.; holding globe in his r. hand; eagle-topped scepter in l.; below, ETPMΓ.

AE. 29 mm. PLATE II.

PAPHLAGONIA

SINOPE

Hadrian (122 A. D.)

48. . . . ΑΔΡΙΑ . . . Head r., laureate.

Rev. . . . LXXVII Bust of Serapis r.

AE. 18 mm. In Waddington, *Receuil général des monnaies grecques d'Asie mineure*, only the date CLXXVIII is given. The era from which this coin

is dated is 45 B. C., when Sinope was made a Roman "Colonia" by Caesar, after having been taken in 70 B. C. by Lucullus. PLATE II.

TROAS

ALEXANDRIA

Caracalla

49. AV MAV ANTONIN Bust r., laureate.

Rev. COL ALEXA In exergue, AVG. Horse feeding r.

AE. 24 mm. Cf. B.M.C., *Troas*, etc., p. 21, No. 96f. PLATE I.

MYSIA

PARIUM

Circa 200 B. C.—Augustus

50. Bust of Artemis r. Countermark: laur. head r.

Rev. ΠΑ|ΠΙΑ|ΝΩΝ Eagle to r. on thunderbolt; whole in laurel wreath.

AE. 23 mm. B.M.C., *Mysia*, p. 101, No. 72. PLATE II.

PERGAMUM

Circa 133 B. C.—Augustus

51. Head of Athena to r.

Rev. ΑΘΗ ΝΑΣ above. Owl on palm; in l. field, club; in r. field Γ. ΝΙΚΗ Φ ΟΡ[ΟΥ below.

AE. 16 mm. Cf. B.M.C., *Mysia*, p. 133, No. 195 ff. The club does not appear on coins of this type in the British Museum Catalogue. PLATE II.

10 A TARSUS COIN COLLECTION

52. Head of Athena r.

Rev. ΑΘΗ ΝΑΣ to r., ΑΡΕΙΑΣ to l. of owl, three-quarters r., with wings closed.

AE. 19 mm. Mionnet, *Suppl.* V., p. 424, No. 900.
PLATE II.

IONIA

MAGNESIA-AD-MEANDRUM

Circa 350–190 B. C.

53. Horseman riding r.; in r. hand, couched spear.

Rev. Humped bull butting l.; below. . . . ΠΕ
ΥΣΔΗΜΗΤΡΙΟΥ, in two lines.

AE. 15 mm. Cf. B.M.C., *Ionia*, p. 160, No. 19ff.
This adds a new magistrate's name to the long list already known for Magnesia.

LYDIA

MOSTENE

Circa first century B. C.

54. ΑΥ ΔΩΝ Head of City r., turreted.

Rev. ΜΟΚ[ΤΗ]ΝΩ Ν The River-god Hermus reclining l.; in his r. hand, reeds, the l. resting on urn from which water flows.

AE. 20 mm. PLATE II.

THYATIRA

Time of Trajan or Hadrian

55. ΙΕΡΑ CV ΝΚΛΗΤΟC Youthful bust of the Senate r.

Rev. ΘΥΑ in exergue, ΤΥΡΙΜ Ν[ΟC Tyrimos naked, r., on horseback.

AE. 23 mm. Cf. B.M.C., *Lydia*, p. 294, Nos. 15 and 16. This coin combines the obverse of the British Museum specimen No. 16 with the reverse of No. 15. PLATE II.

PHRYGIA

LAODICEIA

Time of Titus and Domitian

56. ΛΑΟΔΙΚΕ ΩΝ Bust of Roma r.

Rev. ΔΙΑ Κ ΔΙΟ ΚΚ ΟΥ[ΡΙΔΟΥ Apollo seated l., himation about lower limbs; laurel branch in r. hand; harp in l.

AE. 16 mm. Imhoof-Blumer, *Kleinasiatische Münzen*, p. 267, No. 23. Imhoof suggests that Κ stands for the Roman family name of Cornelia, and that Cornelius Dioscurides was the name of two members of an important family in Laodiceia, a grandfather of the time of Augustus, and a grandson contemporary with Domitian. PLATE II.

ΜΙΔΑΕΥΜ

Domitian

57. ΑΥΤ ΔΟΜΙΤΙΑΝΟΣ ΚΑΙΣΑΡΟΣ Head r., laureate.

Rev. ΜΙΔΑ ΕΩΝ Flaming altar on which is inscribed ΔΙ|ΟΣ in two lines.

AE. 22 mm. Imhoof-Blumer described a similar coin in the *Revue Suisse de Numismatique*, 1913, p.

12 A TARSUS COIN COLLECTION

74, No. 209. The obverse dies are different, the inscription here ending in Σ not ΣEB , and the inscription on the altar, which was illegible on Imhoof-Blumer's coin, is clear, reading $\Delta\text{IO}\Sigma$. PLATE II.

PAMPHYLIA

PERGA

Second Century B. C.

58. Head of Artemis r.

Rev. $\text{AP}[\text{TEMIO}]\Sigma \text{ΠΕΡΓΑΙΩΝ}$ Sphinx r.

AE. 13 mm. Cf. B.M.C., *Lycia*, etc., p. 120, No. 9. This piece differs from the examples in the British Museum and Babelon's *Inventaire Waddington* only in the fact that the obverse head is to the right.

PISIDIA

ANTIOCHIA

Imperial Times

59. ANT IOCH Bust of Men r.

Rev. ANTIOC[H] COL Humped bull standing r.

AE. 13 mm. McDonald, *Catalogue of the Hunterian Collection*, II, p. 515, No. 1. PLATE II.

SEPTIMIUS SEVERUS

60. IMPC]AES L SEP SEVER A[VG Bust l., laureate.

Rev. ANTIOC[H] MENCIS Mên standing r.; holding Nike in l. hand, r. resting on scepter; behind, cock to l.

AE. 22 mm. This type is common for Severus but with the inscription COL CAES ANTIOCH. PLATE II.

CARACALLA

61. IMP C MA R AVR ANT Bust of young Caracalla r.

Rev. Same type and inscription as above.

AE. 21 mm.

TRAJAN DECIUS

62. IMP CAES G MESS DECIO TR AVG Bust r., laureate.

Rev. ANTIOCHI CO River-god Anthios reclining l., holding reed in r. hand, l. holding cornucopiae rests on urn from which water flows; below, ANTHIOC.

AE. 25 mm. Cf. Mionnet, *Suppl.* VII, p. 107, No. 107. PLATE II.

SAGALASSUS

First Century B. C.

63. Bull butting r.

Rev. CA in laurel wreath.

AE. 12 mm. Grose, *McClean Coll.* III, p. 277, No. 8995. Similar coins are described by Imhoof-Blumer, *Kleinasiatische Münzen* II, p. 391, No. 1, and Grose. Both give the description "CA in laurel-wreath"; in Grose (Pl. 322, 18) and on the coin here described there appears to be a Γ in ligature with the A.

14 A TARSUS COIN COLLECTION

TERMESSUS-MAJOR

64. [ΤΕΡ·Γ·]ΜΕΙ ΣΟ Bearded bust, helmeted to l.
Rev. COAV MOC Solymos seated l. on throne.
AE. 24 mm. Cf. *Zeit. f. Num.*, Vol. XII, p. 6.
PLATE II.

CILICIA

ADANA

Antiochus IV (174–164 B. C.)

65. Head of Antiochus IV, radiate, to r.
Rev. ANTIOXEQN TQN ΠΠΟ[Σ ΤΩΙ ΣΑΡΩΙ
Zeus Nicephorus, seated l. on throne; l. hand resting
on scepter. Countermark; anchor.
AE. 22 mm. Babelon, *Rois de Syrie*, p. 77, No.
601.

The anchor, as a Seleucid countermark, is rarely found on coins as late as Antiochus IV. De Saulcy, *Mélanges de Numismatique*, I, p. 60, cites two instances of its use on coins of Timarchus, 162 B. C. He attributes these countermarks either to Antiochus V (164–162 B. C.) or Alexander Bala (150–145 B. C.). The same countermark is found on at least two coins of Adana struck during the reign of Antiochus IV; on the specimen described above, and on one of the small bronzes bearing the same inscription here given and type of horse walking left (*Rev. Num.*, 1854, p. 11, No. 7). Alexander Bala appears to be the more probable author of these countermarks. I know of no instance of the use of the anchor by Antiochus V either as symbol or type; nor is there any record of monetary activity in Cilicia during his short reign. There is, however,

Cilician silver from the time of Alexander; and a small bronze with the name of Alexander and an anchor as reverse type, has been published by Imhoof-Blumer (*Monnaies Grecques*, p. 433, No. 101). PLATE II.

164 B. C. to Early Imperial Times

66. Veiled head of Demeter r.

Rev. ΑΔΑΝΕΩΝ Zeus Nikephoros seated l.; in l. field, Δ above Μ.

AE. 21 mm. Cf. Babelon, *Inventaire Waddington*, No. 4042. PLATE II.

67. Bust of Athena r.

Rev. ΑΔΑΝΕΩΝ Nike advancing l., with wreath and palm; in l. field ΕΕ ΝΩ ΝΟC in three lines.

AE. 24 mm. Cf. Imhoof-Blumer, *Monnaies Grecques*, p. 348, No. 5. This is probably the same name published by Imhoof-Blumer as ΖΗ ΝΩ ΝΘΕ. PLATE II.

AEGEAE

ANTIOCHUS IV

68. Head of Antiochus IV r., bound with fillet; in r. field, ΔΙ(?).

Rev. ΑΙΓΕΑΙΩΝ over bridled horse's head l.

AE. 21 mm. Cf. Imhoof-Blumer, *Kleinasiatische Münzen*, II, p. 423, No. 1. PLATE III.

Circa 164 B. C. to Early Imperial Times


69. Head of City r., veiled and turreted.

Rev. ΑΙΓΕΑΙΩΝ Forepart of bridled horse l.; in r. field Φ.

16 A TARSUS COIN COLLECTION


AE. 21 mm. Cf. McDonald, *Catalogue of the Hunterian Collection*, II, p. 526, No. 2. PLATE III.

70. Same. Countermarked: Herakles head r.

Rev. ΑΙΓΕΑΙΩΝ ΤΗΣ ΙΕΡΑΣ in two lines above. ΚΑΙ ΑΥΤΟΝΟΜΟΥ in two lines below. Head of bridled horse l.; in r. field, . The head in the countermark is a small copy of the obverse type of the two coins following.

AE. 21 mm. PLATE III.

71. Head of bearded Herakles r.

Rev. ΑΙΓΕΑΙΩΝ ΤΗΣ ΙΕΡΑΣ in two lines above club over bow in case; below, ΚΑΙΑΥΤΟΝΟΜΟΥ In r. field, .


AE. 13 mm. Cf. B.M.C., *Lycaonia*, etc., p. 21, No. 10 f. PLATE III.

72. Same.

Rev. ΑΙΓΕΑΙΩΝ below bow in case over club; above, ΝΙΚΙ.

AE. 14 mm. Cf. B.M.C., *Lycaonia*, etc., p. 21, No. 10 f. PLATE III.

73. Head of Athena r., in crested Corinthian helmet.

Rev. ΑΙΓΕΑΙΩΝ [ΤΗ]Σ ΙΕΡΑΣ above, and ΚΑΙ ΑΥΤΟΝΟΜΟΥ below goat kneeling l. Above goat, .

AE. 17 mm. Mionnet, *Suppl.* VII, p. 152, No. 9. PLATE III.

74. Same.

Rev. Goat kneeling l. Above, ΣΟΡ; below, ΝΙΚΟΜ Year 176 (129 A. D.).

AE. 15 mm. Imhoof-Blumer, *Monnaies Grecques*, p. 348, No. 6. PLATE III.

75. Head of Zeus r., laureate.

Rev. ΑΙΓΕΑΙΩΝ Athena, standing facing, holding Nike and spear; in l. field ΔΗ.

AE. 20 mm. Imhoof-Blumer, *Kleinasiatische Münzen*, p. 424, No. 2.

TIBERIUS

76. TIB . . . ΚΑΙΣΑΡ ΟΣΣΕΒΥΣ ΤΟ Head l., laureate.

Rev. ΑΙΓΕ ΑΙΩΝ ΕΥΑΝ in three lines within laurel wreath.

AE. 25 mm. Babelon, *Inventaire Waddington*, No. 4069. From the similarity in the ligatures in the inscriptions, No. 72 may also be from the time of Tiberius. The character of that coin, both obverse and reverse, makes it more likely a revival than a continuance of a type. PLATE III.

ANAZARBUS

COMMODUS (183/4 A. D.)

77. ΜΑΥΡΗ ΚΟ ΚΕΒ Bust r., laureate.

Rev. ΠΡΟΣ ΑΝΑ[ΖΑ]ΡΒΟ Dia-
demed head of Zeus r. No date legible, but a piece described by Mionnet (III, p. 552, No. 73) with same reverse type and inscription gives the date as "ΕΤΟΥΣ ΒC.," the year 202 in the era of the city which Eckhel established as beginning in the fall of 19 B. C.

AE. 26 mm. PLATE III.

18 A TARSUS COIN COLLECTION

SEVERUS ALEXANDER

78. AVTK AV C AΛEΞIANΔP OC Bust r., radiate.

Rev. Illegible. MHTP in exergue. Dionysus, standing in biga of panthers r. Above, in field, BΓ.

Here the obverse bust is radiate, not laureate, as in Mionnet, *Suppl.* VII, p. 174, No. 100.

AE. 27 mm. PLATE III.

79. Same obverse die as No. 78.

Rev. ANAZ ΕΝΔΟΙ MHTPO Nike r., in biga; palm over r. shoulder. Above, in field, ΓB.

AE. 28 mm. Cf. B.M.C. *Lycaonia*, etc. p. 36, Nos. 28, 29 and Babelon, *Inventaire Waddington*, No. 4145. This form of inscription with 'ενδούου is also used on coins of Alexander and Mamaea, with the temple type, similar to the following. PLATE III.

MAXIMUS (235/6 A. D.)

80. Γ·IOV·OVH·MAΣIMO[C]·KAI Bust r., head bare.

Rev. ANAZ·ΕΝΔ·MHTPOΠ Tetrastyle temple with single arch; within, Tyche seated l. on rock; in r. hand, two ears of corn; at her feet, River-god; to r. and l., Γ B; in exergue, ΕΤΑNC

AE. 33 mm. Babelon, *Inventaire Waddington*, No. 4150. PLATE III.

The letters ΓΓ and ΓB appearing on this and the following coin are usually explained as γράμματι γερουσίας and βουλῆς meaning "by authority of the secretary of the Senate." These letters appear also on almost all Tarsus coins after the time of Commodus. The letters AMK are also common on the coins of the rival cities of Anazarbus and Tarsus

and stand for the boastful claim *πρώτης μεγίστης καλλίστης* meaning "the first, the greatest, and the best." (Cf. B.M.C., *Lycaonia*, etc., pp. lxxxviii and xc).

VALERIAN

81. AVTKOVAΛEPINNOC (sic) Bust r., radiate.

Rev. ANAΪAPBOV MHTPOΠO Bust of Mariniana r., crescent behind shoulders; in field ΓΓ and AMK vertically.

AE. 23 mm. Grose, *McClellan Collection*, III, p. 287, No. 9051. PLATE III.

Grose does not attempt to identify the reverse portrait, which I believe to represent Mariniana, the wife of Valerian. Nothing seems to be known about her. It has been assumed that she died before Valerian became emperor, for on the Roman coins she is invariably veiled. The resemblance to her portraits on Roman coins is marked, but the veil makes it difficult to compare the style of hair-dressing—a criterion usually helpful in distinguishing the imperial ladies. If the coiffure is of no help in the positive identification of this portrait with Mariniana, it at least makes it certain that the portrait is not intended for Salonina, who likewise appears on coins of Valerian, although only when associated with her husband, Gallienus.

ANEMURIUM

SEVERUS ALEXANDER

82. . . . V CEV AΛEZA Head r., laureate.

Rev. NE Mummy-shaped cultus statue of Artemis; at her feet, to l., a stag.

AE. 32 mm.

This coin is in very poor condition, but I record it because it appears to be rare, though described by both Eckhel and Mionnet (III, p. 558, No. 108). The type is common for Philip I and for Valerian I, examples of which are included in this collection.

CIBYRA MINOR (or Phrygia?)

83. Female head r., wearing stephane.

Rev. KIBYPATΩ[N Zeus seated l., r. hand resting on sceptre before him; in l. field, ΑΑΥ.

AE. 22 mm. PLATE IV.

84. Head of Augustus r., bare.

Rev. CEBACT OC KIBYPAT Around and below capricorn to r., looking back.

AE. 17 mm. PLATE IV.

A piece of this type, but reading CEB KIBYPATΩN is given by Imhoof-Blumer to Cibyra in Phrygia (*Monnaies Grecques*, p. 397, No. 88), and another similarly assigned, with KIBYPATΩN only, is listed in the *Inventaire Waddington* (No. 5819). Imhoof-Blumer assumed CEB to stand for Σεβαστή, a title assumed by the city in honor of Augustus. This seems not to be the case. The Σεβαστός refers to Augustus, whose name does not appear on the obverse but is given on the reverse together with the name of the city.

Few coins have been attributed to Cibyra in Cilicia but it seems possible that some of these small crude pieces may belong there.

CLAUDIOPOLIS (*Mut*)

85. ΑΙΤΡΑΙΑ ΑΝΟΚΚΕΒ Head of Hadrian r., laureate. Countermark: head r.
Rev. ΚΛΑΥ ΔΙ Tyche standing l.
 AE. 24 mm. B.M.C. p. 60, No. 1. The reverse is from the same die as the British Museum specimen, which is the only other recorded example.
 PLATE IV.

CORYCUS

GORDIAN III

86. ΑΥ Κ ΜΑΝΤΩ ΓΟΡΔΙΑΝΟ Bust r., radiate.
Rev. ΚΟΡ]ΥΚΙΩ Ν ΑΥΤΟ ΝΟ ΜΩΝ in two concentric lines. Hermes, standing l., holds purse in r. hand, in l., winged caduceus and chlamys; at his feet, ram l.
 AE. 30 mm. Mionnet, *Suppl.* VII, p. 206, No. 228. PLATE IV.

DIOCAESAREA

TIME OF HADRIAN

87. ΔΙΟ[Κ]ΑΙ ΚΑΡΕΩΝ Bust of City-goddess r., veiled and turreted.
Rev. Eagle standing on thunderbolt; head l., wings displayed.
 AE. 22 mm. PLATE IV.
 As on the coin described in the British Museum Catalogue, p. 71, No. 2 (of which there are two examples in the Adana collection), here the bust of the City and an eagle serve as types, but the size of the flan and the dashing style of the design more nearly resemble a coin published by Langlois, *Rev.*

22 A TARSUS COIN COLLECTION

Num. 1854, p. 15, No. 15, which presents a third variety, the eagle on palm with head to right.

CARACALLA

88. AVTOK·KAIC·M·AYP·ANTΩNEINOC CEB

Bust r., laureate.

Rev. AΔP·ΔIOKAI CAP EQN Athena in quadriga l., hurling thunderbolt with l. hand and holding snake-fringed aegis in r.

AE. 31 mm. Cf. B.M.C., p. 73, No. 10. On this example the snakes described by Longperier as quoted in *Rev. Num.* 1844, p. 227 are clearly visible. PLATE IV.

ELAEUSSA-SEBASTE

First Century B. C.

89. Head of Zeus r., laureate, or bound with taenia.

Rev. EΛAIQYΣΣIQN Nike advancing l.; in outer l. field NIK ΔIO in two lines.

AE. 20 mm. PLATE IV.

There are five examples of this type in our collection. The names or monograms of all but the above are listed by Imhoof-Blumer in the *Rev. Suisse*, 1898, p. 25 f. On this coin the head of Zeus is bound with taenia and the obverse letters, possibly EN, are mostly off flan. The letters on the reverse are clear, NIK ΔIO in two lines. ΔIO alone is found on coins of this type (B.M.C., p. 234, No. 2, and *Inventaire Waddington*, No. 4704). The combination of the two names occurs on a coin of the following type (*Inventaire Waddington*, No. 4708).

90. Turreted head of City-goddess r., behind, ΠΡ (?)

Rev. ΕΛΑΙΩΥΣΣΙΩΝ Hermes standing l.; in outer l. field, Α.

AE. 17 mm. PLATE IV.

91. Same as No. 90, but behind head, ΣΑ.

Rev. Same as No. 90 but in outer l. field ΑΙ ΣΙ in two lines.

AE. 17 mm. PLATE IV.

VALERIAN

92. Inscription illegible. Bust r.

Rev. . . BACTH IEP A[CA]VTNAVAPXIC
Zeus seated l. on throne; holding thunderbolt in r. hand, l. resting on scepter; in l. field ΠCP in r. field ΔET downwards.

AE. 17 mm. PLATE IV.

The letters ΠΣΡ and ΔET also appear on other coins of Valerian for Elaeusa, as well as on certain pieces of Gordian for this city. Professor Hubble suggests that, as on coins of Side (Head, *Hist. Num.*, p. 704), we have here Π(ιστήs) Σ(υμμάχου) 'Ρ(ωμαίων). Since Elaeusa was "autonomous" (*loc. cit.* p. 735), it might also have been "σύμμαχος" although there is no evidence for this. The ΔET seems to be Δ(ωρεαῖs) 'Ε(ξαίρεταῖs) Τ(επειμημένηs) (cf. Le Bas-Waddington, *Inscriptions of Tarsus*, III, No. 1480).

FLAVIOPOLIS

SEVERUS ALEXANDER (227 A. D.)

93. . . . M·A·CE·ΑΛΕΞΑΝΔΡ Bust r., radiate.

Rev. ΦΛΑ[ΟΥΙΟΠΟΛ]ΕΙΤΩΝ ΕΤ Bust of Zeus Ammon r.; in field, ΓΝ Ρ in two lines.

AE. 22 mm.

HIEROPOLIS-CASTABALA

First Century B. C.

94. Head of City-goddess r.; behind, ☒ (?).

Rev. Ι]ΕΡΟΠΟΛΙΤΩΝ to r. ΤΩΝ ΠΡΟΣ ΤΩΙ ΠΥΡΑΜΩΙ in two lines to l. of Goddess enthroned l.; r. hand extended, l. hand holding palm branch.

AE. 20 mm. On this piece the goddess is not wearing a kalathos, nor is there an eagle under the throne, as in B.M.C., p. 82, No. 1. PLATE IV.

95. Head of Artemis r., quiver behind shoulder.

Rev. Ι]ΕΡΟΠΟΛΙΤΩΝ to l., ΤΩΝ ΠΡΟΣ ΤΩΙ ΠΥΡΑΜΩΙ in two lines to r. of eagle, with closed wings, standing l.

AE. 19 mm. PLATE IV.

In his *Monnaies Grecques*, Imhoof-Blumer attributes certain bronzes with the letter and monogram ΙϜ and Artemis types to Hieropolis-Castabala, one of his arguments being that, according to Strabo, this city was famous for its sanctuary of Artemis-Perasia. In the *Rev. Suisse*, 1895, p. 309 ff., he re-attributes these coins to Hierocaesarea in Lydia, leaving Hieropolis with no early coins of the Artemis type. The specimen here is unfortunately not well centered and it is impossible to say whether or not the letters ΠΙΕΡ were inscribed below the neck.

MOPSUS

DOMITIAN (93/4 A. D.)

96. KAICAP ΔΟΜΙΤΙΑΝΟC Head r., laureate.

Rev. ΜΟΥΣΕΑ ΤΩΝ ΑΣΠ Artemis Huntress standing facing, wearing short chiton; she holds bow

in l. hand, and with r. takes arrow from quiver at her shoulder.

AE. 18 mm. PLATE IV.

NINICA

COMMODUS

97. IMP]M·AVR· COMO AN Bust r., laureate.

Rev. COL]IVL AVG FEL Tetrastyle temple, within central intercolumniation, NINI CA in two lines.

AE. 31 mm. Cf. *Num. Zeit.*, 1902, p. 17, No. 8. PLATE IV.

SEVERUS ALEXANDER

98. IMP C MAVR ΓΕΟV ΑΛΕΧΑΝΔΕΡ Bust r., laureate. Countermark ☉.

Rev. NINICO LC ΛΑΔΙΟ . . . Silenus, in boots, standing facing; r. hand raised, and holding wineskin over l. shoulder; in l. field, L. PLATE V.

AE. 28 mm. Cf. *Num. Zeit.*, 1902, p. 19, No. 12.

There are also two coins of Maximinus in the collection: type, Colonist plowing to right, Nos. 22 and 23 in Kubitschek's article in the *Numismatische Zeitschrift*. One of these has four countermarks on the obverse: Nike to right, eagle, six-pointed star and ☉.

OLBA

TIME OF DOMITIAN

99. Head of Athena r.

Rev. ΟΑΒ ΕΩΝ Caps of the Dioscuri surmounted by stars; between them, a harpe.

26 A TARSUS COIN COLLECTION

AE. 18 mm. *Inventaire Waddington* No. 4429.
PLATE V.

COMMODUS

100. . . . KAI·M·AYP·KOΛ·ANT Bust
r., laureate.

Rev. . . OABEΩN·ΛHTPO Bust of Sarapis r.
AE. 25 mm.

On the known examples of this coin the obverse inscription is illegible. In the British Museum Catalogue, p. 125, No. 26, it is attributed to Verus, and by Imhoof-Blumer, *Griechische Münzen*, p. 187, No. 568, it is described as the "bust of M. Aurelius or L. Verus." PLATE V.

SELEUCIA AD CALYCADNUM

Second and First Centuries B. C.

101. Head of Athena r., behind, K; in front, branch.

Rev. ΣΕΛΕΥΚΕΩΝ ΤΩΝ ΠΡΟΣ ΤΩΙ ΚΑΛΥ-
ΚΑΔΝΩΙ Nike l.; in l. field ΑΦ ΕΙ in two lines.

AE. 23 mm. Cf. B.M.C., p. 128, No. 2 ff.
PLATE V.

102. Same as No. 101 but behind head ΕΡ.

Rev. Same as No. 101 but in l. field ✱.

AE. 22 mm. PLATE V.

103. Same as No. 101 but behind head ΣΑ.

Rev. Same as No. 101 but in l. field ΑΘΗ ΑΘΗ in
two lines.

AE. 23 mm. PLATE V.

104. Head of Apollo r.; behind, ΣΑ.

Rev. Same inscription. Forepart of horse r.;
above ΑΘΗ; below ΑΘΗ.

AE. 18 mm. *Inventaire Waddington*, No. 4449.
PLATE V.

105. Same as No. 104 but behind head ΔΠ

Rev. Same as No. 104 but above ΔH; below AΘ.
(Very crude, barbarous imitation?).

AE. 17 mm. PLATE V.

Imperial Times

106. Head of Athena r.

Rev. ΣΕΛΕΥΚ Owl l. on olive branch; behind ⚙.

AE. 19 mm. PLATE V.

107. CΕΛΕΥ ΚΕ Bust of Athena r.

Rev. ΔΙΥC KOYPIAC Owl l. on olive branch.

AE. 20 mm. B.M.C., p. 131, No. 16. PLATE V.

108. Bust of Athena r.

Rev. CΕΛΕΥΚΕΩΝ KA in two lines. Owl l., head facing, on olive branch.

AE. 22 mm. PLATE V.

109. C above ΕΛ to r. of club in oak wreath.

Rev. ΔΙOC KOYP Owl l., within olive wreath.

AE. 17 mm. Cf. Mionnet, III, p. 599, No. 281;
and Imhoof-Blumer, *Griechische Münzen*, p. 188,
No. 574. PLATE V.

110. Head of Aphrodite r.

Rev. ΠΥ Α Five-leafed plant.

AE. 15 mm. Cf. Imhoof-Blumer, *Kleinasiatische Münzen*, p. 481, No. 4. PLATE V.

111. Same but ΙΕ behind, and Π in front of head.

Rev. Same but with IH Α (?).

AE. 13 mm. PLATE V.

112. Five-leafed branch, Α to l.; to r., (?).

Rev. Five-leafed branch. In field Α ϣ (?).

28 A TARSUS COIN COLLECTION

AE. 13 mm. Imhoof-Blumer, *Kleinasiatische Münzen*, p. 481, No. 6. PLATE V.

113. Head of City-goddess r., veiled and turreted.

Rev. C]EΛEYKEQN Athena standing l.; Nike in r. hand, l. resting on shield. In l. field, ΔΗΜΗΤΡΙΟΥ in two lines.

AE. 23 mm.

The autonomous coins of Seleucia appear to have been issued consistently in two denominations. In the earliest issue the larger denomination (Nos. 101–103) have the head of Athena on the obverse, and Nike to right on the reverse (average weight of five specimens in this collection, 7.93 gr.). The half, contemporary with these and showing the same magistrates' names (Nos. 104 and 105) has as obverse type the head of Apollo, and as reverse the forepart of a horse (average weight of four specimens from this collection, 3.87 gr.).

In the next series the bust of Athena, with owl as reverse, represents the larger denomination, and the club with owl, the half. No. 106 is transitional between series one and two, the monogram Ⓐ probably indicating the same magistrate signing himself ΑΘΗ on the previous series. The only other magistrate striking these types seems to have been ΔΙΟΣΚΟΥΡΙΑΣ.

A third series is signed by ΔΗΜΗΤΡΙΟΥ. No. 113 is an example of the larger denomination and the smaller (18 mm.) is given by Imhoof-Blumer, *Monnaies grecques*, p. 363, No. 45. There the bust of Athena again serves as obverse, and Nike to left

is the reverse type. The two coins, Nos. 110 and 111, represent a third denomination (wts. 2.31 gr. and 2.54 gr.), and No. 112 (wt. 1.57 gr.) possibly presents a fourth which cannot certainly be connected with any of these issues.

HADRIAN

114. . . . KAICAP AΔPIAN Head r., laureate.

Rev. CEΛEV ΠPOCTKAAYKAAΔNΩ.

Bust of Athena r.

AE. 25 mm. PLATE V.

MARCUS AURELIUS CAESAR

115. AVPHAIIOC KAICAP Bust r., head bare.

Rev. CEΛEVK. . . . Bull advancing r.; above, star in crescent.

AE. 20 mm. Cf. coin of Diadumenian, B.M.C., No. 32. PLATE V.

JULIA DOMNA

116. IOVAIA ΔOM NA CEBACT Bust r.

Rev. CE]ΛEVK EΩN KAAYKAAΔ Europa seated l. on bull galloping r., bull led by flying Eros; beneath, half figure of River-god crowned with sedge, holding rudder in l. hand, and in r., dolphin. ?

AE. 24 mm. Imhoof-Blumer, *Kleinasiatische Münzen*, II, p. 483, No. 10, Pl. XVIII, 20.

CARACALLA

117. AVK·M·A·ANTΩNINOC Bust r., laureate.

Rev. CEΛEVKE ΩN in two lines in exergue,

ΤΩΝΠΙΡΟC ΚΑΛV above. Dionysos r. in biga of panthers; carrying thyrsus as goad in r. hand, with l. pouring wine from cantharus over panthers' heads. In front, Silenus with upraised head.

AE. 28 mm. Babelon, *Inventaire Waddington*, No. 4464. This coin, the one in the Waddington collection and a similar piece for Septimius Severus and Julia Domna (B.M.C., p. 133, No. 27), all seem uncirculated. PLATE VI.

118. AVK·M·A· ANTΩNEINOC Head r., laureate. Countermark, Δ.

Rev. CΕΛΕVKE ΩN in two lines in exergue, ΤΩΝΠΡ . . . ΛVK above. Infant Dionysos on throne attended by three Korybantes.

AE. 32 mm. Imhoof-Blumer, *Kleinasiatische Münzen*, p. 484, No. 13, Pl. XVIII, 21.

SEVERUS ALEXANDER

119. AVK·M·AVP CΕOVH AΛEEAN Bust r., laureate.

Rev. CΕA in exergue, and around, ΕY]KEΩ N ΚΑΛV The emperor, laureate on horseback, riding r.; under raised forefoot of horse, flaming altar.

AE. 27 mm. *Revue Numismatique*, 1903, p. 342, No. 151. PLATE VI.

GORDIAN III

120. . . . ΝΓΟΡΔΙΑΝΟC Bust r., radiate. Countermark Δ.

Rev. CΕAΕ . . . in exergue, . . . AΔNΩ . . . to l. Infant Dionysos seated on throne surrounded

by three Korybantes, helmeted and beating on shields.

AE. 28 mm. See No. 118 above. Similar groups are also known for Macrinus (B.M.C., p. 134, No. 30) and Alexander (*Inventaire Waddington*, No. 4467). PLATE VI.

121. ANTΩNIOC ΓΟΡΔΙΑΝΟC Bust r., radiate.

Rev. CΕΛΕΥ Κ ΕΩ ΤΩ ΠΡΟC ΤΩΚ Athena r., aegis over l. arm, hurling thunderbolt at serpent-footed giant before her.

AE. 29 mm. Mionnet, III, p. 604, No. 313. PLATE VI.

122. . . . NTΩNIOC ΓΟΡΔΙΑΝΟC CΕΒΑC Bust r., laureate. Countermark ▲.

Rev. . . . VΚΕΩNT . . . ΠΡ ΟCΤΩ, on inner line ΠΡΟ (sic.) Europa, holding veil over her head, on bull galloping r.; under bull, dolphin r.

AE. 26 mm. A simplified version of No. 116. PLATE VI.

123. ΜΑΡ ΑΝΤΩNIOC ΓΟΡΔΙΑΝΟC CΕΒ Bust r., laureate. Countermark, ▲.

Rev. CΕΛΕVΚΕΩ NTΩNΠΡΟCΤ; in inner circle, ΩΚΑΛVΚΑΔΝΩ Nike on orb facing, with both arms holding above her head a wreath, within which, ΕΛΕ ΥΘΕ.

AE. 33 mm. *Inventaire Waddington*, No. 4471.

124. . . . ΓΟΡΔΙΑ . . . Bust r., laureate. Countermark, ▲.

Rev. CΕΛΕVΚΕΩ NTΩΠΡΟC ΤΩ ΚΑΛV ΚΑΔΝΩ Tyche seated l., r. hand resting on pedimented object, inscribed CVN ΤΕΛ ΙΟC in three lines.

AE. 35 mm. B.M.C., p. 137, No. 39. PLATE VI.

This seems to be the same coin as the one in the British Museum from whose condition only a conjectural reading was possible. Here the inscription CVNTEΛIOC is clear. Professor Hubble suggests that this may be a corrupt form of the word συντελεωσ (ις) found in the *Papiri Fiorentini* I, 6, 17, also dating from the third century. Its meaning there is "completion." If the frame containing the inscription were clearly a distyle shrine as described in the British Museum Catalogue, then its meaning as commemorating the completion of a temple would seem obvious. Since, however, the object on which Tyche's hand rests seems more like an ornamental stele than a temple, it is probable that the reference is to some now unidentified public work.

OTICILIA

125. OTAKIA CΕVHP ANΕVC CΕBA Bust r., wearing stephane.

Rev. CΕΛΕVKEΩ NTΩN ΠP KΑΛVKEΛΕV around, and in l. field, ΘΕ P in two lines, AC in r. field. Nike with wreath and palm l., on orb.

AE. 33 mm. Mionnet, III, 607, 327. The title ΕΛΕΥΘΕΡΑΣ, free city, first appears under Domna and Caracalla. PLATE VI.

TREBONIANUS GALLUS

126. Illegible inscription. Bust r., radiate.

Rev. Illegible inscription. Confronting busts of

Sarapis r., wearing decorated calathus, and Isis in horned head-dress.

AE. 33 mm. Probably same dies as *Num. Zeit.*, IV, p. 244. PLATE VI.

VOLUSIAN

127. AV·K·ΓΑ OVIB CAB IN ΓΑΛΛΟC Bust r., radiate.

Rev. C]ΕΛΕ in exergue; around, VΚΕΩΝ ΤΩ ΠΡ; in l. field, KA, and ΔΝΩ in r. field vertically. Round-topped altar between two vexilla.

AE. 32 mm. See *Inventaire Waddington*, No. 4479 and *Revue Suisse*, 1908, p. 218, No. 2, where this coin is attributed to Gallus, but the portrait seems more appropriate for Volusian. PLATE VI.

In the *Numismatische Zeitschrift*, 1877, p. 388, this obverse inscription is discussed by Joseph von Kolb, who points out that the accompanying portrait is always that of a young man. The inference seems plain that the name Sabinius was adopted by Volusian rather than by his father. Hill, in B.M.C., *Lycaonia*, etc., p. 141, No. 54, attributed to Volusian another coin with this obverse inscription.

SOLI

Circa 385–300 B. C.

128. Head of Athena r., in crested Corinthian helmet.

Rev. Bunch of grapes in incuse square.

AE. 10 mm. PLATE VI.



34 A TARSUS COIN COLLECTION

129. Head of Athena r., in crested Athenian helmet wreathed with laurel.

Rev. ΣΟΛΕ . . Bunch of grapes with tendrils. ☉ in l. field.

AE. 13 mm. Cf. B.M.C., p. 150, No. 34. PLATE VI.

130. Same, without wreath.

Rev. ΣΟΛ ΕΩ[N, type as above; ΑΓΗ ΣΙΟ in field.

AE. 12 mm. PLATE VI.

131. Same.

Rev. ΣΟΛΕΩΝ, same, Α in field.

AE. 13 mm. PLATE VI.

132. Same as No. 129, but head l.

Rev. ΣΟΛΕ Same type, * in l. field.

AE. 13 mm. PLATE VI.

133. Head of Athena as on 131, Ε behind head.

Rev. ΣΟΛΕΩΝ Bunch of grapes. Ν above Κ in r. field.

AE. 17 mm. This monogram appears on a coin in the British Museum Catalogue (No. 40) similar to our type No. 141. PLATE VI.

134. Same type.

Rev. ΣΟΛΕΩΝ Eagle r. on thunderbolt; Λ above Μ in r. field.

AE. 14 mm. Cf. B.M.C., p. 152, No. 46. PLATE VI.

135. Similar to No. 133.

Rev. Similar to No. 133; between legs, Ν; another name farther to r., illegible.

AE. 14 mm. PLATE VI.

136. Similar to No. 133.

Rev. ΣΟΛΕΩΝ Owl; Α above Ν in l. field.

AE. 20 mm. Cf. B.M.C., p. 151, No. 41. PLATE VI.

137. Head of Tyche r.

Rev. ΣΟΛΕΩΝ beneath caps of the Dioscuri. Below, Α.

AE. 19 mm. Cf. B.M.C., p. 151, No. 42. PLATE VI.

138. Same type as No. 137.

Rev. Same type as No. 137, but below, ΔΙ.

AE. 22 mm.

139. Head of Artemis r.

Rev. ΣΟΛΕΩΝ Double cornucopiae; in l. field, Ε.

AE. 17 mm. Babelon, *Inventaire Waddington*, No. 4507. PLATE VI.

140. Head of Athena r.

Rev. ΣΟΛΕΩΝ Dionysos in head-dress of bull's horns; Η above Ν in l. field.

AE. 20 mm. Cf. B.M.C., p. 151, No. 37.

141. Head of Artemis r., behind head, Α.

Rev. ΣΟΛΕΩΝ Athena fighting r.; Ϝ above Ν in r. field.

AE. 31 mm. Cf. B.M.C., p. 151, No. 39 f. PLATE VII.

142. Radiate male head r.; behind, Ϝ.

Rev. ΣΟΛΕΩΝ Athena seated l.; Ϝ above Ν in r. field.

AE. 28 mm. Cf. B.M.C., p. 152, No. 45. PLATE VII.

SOLI POMPEIOPOLIS

*Circa 66 B. C. to Imperial Times***143.** Head of Pompeius r.*Rev.* ΠΟ]ΜΠΗΙΟΠΟΛΕΙΤ[ΩΝ Nike r., in r. field, ΦΙ ΑΛ in two lines.

AE. 20 mm. Cf. B.M.C., p. 153, No. 54.

144. Same as No. 143, but behind head, ||.*Rev.* Same as No. 143, but in r. field, ΑΕ above ✕ (?)

AE. 20 mm. PLATE VII.

145. Star of six rays.*Rev.* Inscription illegible. Caps of the Dioscuri with pendant strings.

AE. 14 mm. PLATE VII.

This coin is of very thin fabric and may not belong to Soli. Its weight, 1.45 gr., is approximately one-quarter of 5.87 gr., the weight of No. 137 with the same reverse.

*163/4 A. D.***146.** ΘΚC Nike l.*Rev.* [ΠΟΜΠΗΙΟ]ΠΟΛΕΙΤΩΝ Figure, with r. hand raised, standing l.AE. 19 mm. Imhoof-Blumer, *Journal of Hellenic Studies*, 1898, p. 167, No. 17.

GORDIAN III

147. ΑΥΤ ΚΑΙ ΜΑΝΤ ΓΟΡΔΙΑΝΟC CΕΒ Bust r., radiate. In field, ΠΠ.*Rev.* ΠΟΜΠΗΙΟΠΟΛ Bust of a philosopher r.

AE. 32 mm. Babelon, *Inventaire Waddington*, No. 4525, Pl. VI, 18.

Imhoof-Blumer thinks the philosopher is not Chrysippus but possibly Philemon of Soli. (*Journal of Hellenic Studies*, 1898, p. 168, No. 22, Pl. XII, 19.)


TARSUS



Circa 174-164 B. C.

148. Club in wreath of oak-leaves.


Rev. ANTIOXEΩN TΩN ΠΡΟΣΤΩΙ KYΔNΩ[I
Cornucopiae; to l.,  r., .


AE. 21 mm. Cf. Babelon, *Inventaire Waddington*, No. 4591. PLATE VII.

149. Head of City-goddess r., wearing turreted crown; behind, 

Rev. Same inscription as above. Sandan in tall head-dress and knee-length garment, standing r. on winged and horned lion; in l. field ; in r. field, 

AE. 18 mm. Imhoof-Blumer, *Monnaies grecques*, p. 366, No. 54. PLATE VII.

150. Same type. Behind head, .

Rev. Same type, but in l. field, .



AE. 17 mm. PLATE VII.

151. Same type. Behind head, .

Rev. Monogram illegible.

AE. 17 mm.

152. Same type. Monogram behind head illegible.

Rev. Inscription as on No. 148. Zeus seated l. on throne; in l. field, ; in r. field, .

AE. 21 mm. PLATE VII.

Circa 164 B. C. to Early Imperial Times

153. Same type.

Rev. TAPΣEQN around on r. Zeus seated l., holding eagle-topped scepter in r.

AE. 22 mm. PLATE VII.

This is a transitional type—on the following coins the inscription is in a straight line.

154. Same. Behind head, A

Rev. T]APΣEQ[N in l. field. Zeus seated l.; in r. field, Δ above A.

AE. 19 mm. PLATE VII.

155. Same. Monogram illegible.

Rev. Same, but in r. field, A above M.

AE. 21 mm.

156. Turreted head of City-goddess r. within wreath of ivy leaves.

Rev. TAPΣEQN Pegasus l., below, M A.

AE. 18 mm. The monograms are the same as on No. 155 and are probably those of the same magistrates.

Many writers in Roman times refer to the derivation of the name *Ταρός* from the word *ταρός* which for our purpose may be loosely translated as foot and ankle. The legend is that, coming down from a visit to Zeus and flying over Cilicia, Pegasus with Bellerophon on his back alighted on the banks of the Cydnus. In alighting, Pegasus stumbled and Bellerophon fell. Some authors state that in this accident Bellerophon sprained his *ταρός*; others, that Pegasus suffered the mishap. Evidently the artist considered Pegasus alone responsible for giving

this name to the city since on this coin Pegasus only is depicted. Indeed, the earliest reference to this accident which has come to my notice is by Dionysios Periegetes (864), (see, *Geog. Graec. Minores* II, ed. C. Müller, p. 15), who, writing in the first century B. C. or about the time that this coin was struck, states that Pegasus here sprained his "tarsus" and Bellerophon fell from his back.

157. Same as No. 149, but behind head, Φ .

Rev. ΤΑΡΣΕΩΝ Sandan standing r. on horned and winged lion; in l. field, \mathcal{A} .

AE. 16 mm. PLATE VII.

158. Same, but inscription illegible.

Rev. Same as No. 157, but in field, \mathcal{A} .

AE. 15 mm.

159. Same, but inscription illegible.

Rev. Same as No. 157, but in field, Δ I above \mathcal{A} .

AE. 15 mm. PLATE VII.

160. Same, but inscription illegible.

Rev. Same as No. 157, but in field, \mathcal{A} \mathcal{A} .

AE. 14 mm.

161. Head of City-goddess, veiled and turreted.

Rev. Same as No. 157, but in l. field, Δ Σ K above Δ IO.

AE. 22 mm. Cf. B.M.C., *Lycaonia*, etc., p. 178, Nos. 95 ff. PLATE VII.

162. Same as No. 161.

Rev. Same as No. 161, but in l. field, Δ IO above Δ O.

AE. 19 mm. PLATE VII.

40 A TARSUS COIN COLLECTION

163. Same as No. 161, filleted border.

Rev. Same as No. 161, but in l. field, Φ I above ΛΟ.
AE. 21 mm.

164. Same as No. 161.

Rev. Same as No. 161, but ΛΙ above ΩΓΕ or ΩΠΕ.
AE. 23 mm. PLATE VII.

165. Blundered inscription. Zeus seated l.; in r. field, ΝΙ.

Rev. Filleted club in wreath.

AE. 15 mm. Cf. B.M.C., *Lycaonia*, etc., p. 183,
No. 126 f. PLATE VII.

The reverse of this coin has no trace of the word
ΛΥΣΙΑ, nor monogram for ΜΗΤΡΟ.

166. Head of City-goddess r., wearing turreted
crown.

Rev. ΤΑΠΣΕΩΝ Monument or pyre of Sandan; in
l. field, ✠.

AE. 20 mm. Cf. B.M.C. *Lycaonia*, etc., p. 180,
No. 105 ff. PLATE VII.

167. Same as No. 166. Countermark: radiate head
r.

Rev. Same as No. 166, but in l. field, ΚΑ ΜΙ Α
in three lines.

AE. 20 mm. Cf. B.M.C. *Lycaonia*, etc., p. 180,
No. 111. PLATE VII.

168. Head of City r., veiled and turreted.

Rev. Same as No. 166, but in l. field, ΕΠΙ ΓΕ in
two lines.

AE. 25 mm. PLATE VIII.

169*, 170. Same as No. 168.

Rev. Same as No. 168, but in l. field, ΑΡ ΑΡ ΔΙ Θ
in four lines.

AE. 22 mm. One countermarked head l., not radiate. PLATE VIII.

171. Same as No. 168.

Rev. Same as No. 168 but in l. field, CAN ΦΙΑΙ in two lines.

AE. 27 mm. Imhoof-Blumer, *Journal of Hellenic Studies*, 1898, p. 170. PLATE VIII.

172. Tyche seated r., River-god at her feet. Filleted border.

Rev. ΤΑΡΣΕΩΝ Zeus Nicephoros, enthroned l.; in l. field, ☐.

AE. 28 mm. Cf. B.M.C., *Lycaonia*, etc., p. 182, No. 122 ff. PLATE VIII.

173. Same as No. 172.

Rev. Same as No. 172 but in l. field, ΔΙΟ above ΔΟ.

AE. 27 mm. (Cf. No. 162 above). PLATE VIII.

174. Same as No. 172.

Rev. Same as No. 172 but ΤΑΡΣΕΩΝ, and in l. field, ΠΡΥ above ΤΟ

AE. 28 mm. PLATE VIII.

Imperial Times

175. Bust of City r., veiled and turreted.

Rev. ΤΑΡΣΕΩΝ ΜΗΤΡΟΠΟΛΕΩ Sandan standing r., on horned and winged lion.

AE. 17 mm. Cf. B.M.C., *Lycaonia*, etc., p. 184, No. 131. PLATE VIII.

176. Same as No. 175.

Rev. Same as No. 175 but with ΤΑΡΣΕΩΝ ΜΗΤΡΟ. Border of dots.

42 A TARSUS COIN COLLECTION

AE. 17 mm. PLATE VIII.

177. TAP COV Female head l., veiled, star above forehead.

Rev. MHT POΠOΛEΩ Sandan as above; in l. field, N.

AE. 16 mm. Mionnet III, p. 662, No. 407, PLATE VIII.

The head appears to be that of the deified Sabina, and the date, therefore, probably 138 A. D., or later.

178. AΔPIANOC TAPCEΩN in two lines to r. of Zeus Nicephoros enthroned l.

Rev. MHTPOΠO ΛEΩC in two lines to l. of Tyche seated l., River-god at her feet; all within wreath.

AE. 28 mm. Cf. B.M.C., *Lycaonia*, etc., p. 185, No. 139. PLATE VIII (obv.)

179. Same as No. 178, but √ for Ω on both obverse and reverse.

AE. 26 mm. PLATE VIII.

ANTONINUS PIUS

180. AVT KAI TPAI AΔP ANTΩNINOC CEB EV

Pius as Zeus seated l. on throne; in field, Π Π.

Rev. TAPCEΩN MHTPOΠOΛE ΩC in three lines to l. and AΔ PIA to r. of Tyche seated r. on ornamental seat, at her feet half-figure of River-god crowned with sedge.

AE. 25 mm. PLATE VIII.

HADRIAN

181. Illegible inscription. Head r., laureate.

Rev. TAPCEΩN in r. field, Zeus Nikephoros, seated; in l. field, PTA.

AE. 20 mm.

Professor Hubble suggests that PTA be completed to read P(ωμαίων) T(αρσηνῶν) 'A(δριανῶν) by analogy with coins of Sagalassus (Head, *Historia Numorum*², p. 710).

182. . . . IANOY CEB OΛYMPHOC Head r., bare.

Rev. AΔPIAN[HC TAPCOY MHTP]OΠOΛEΩC Zeus as above.

AE. 27 mm. *Revue Numismatique*, 1854, p. 98, No. 49.

ANTONINUS PIUS

183. AVT . . . ANTONINOE CEBE Head r., laureate; Π Π in field.

Rev. ΔΗΜΟΑΔΡΙ . . . ΠΕΩΝ ΜΗΤΡΟΠΟΛΕΩC Demos seated l., holds wreath in r.; in l. field, star; under throne, a trident.

AE. 29 mm. Cf. B.M.C., *Lycaonia*, etc., p. 190, No. 161.

184. Same as No. 183.

Rev. Same as No. 183, but no star in l. field.

AE. 29 mm. Cf. B.M.C., *Lycaonia*, etc., p. 190, No. 161.

COMMODUS

185. AVTKAI AVP KOMOΔOC CE Bust r., wearing crown and garment of demiourgos; star in front of bust.

Rev. TAP · ΜΗΤΡΟΠΟ · ΑΔΡ · KOM Prize crown; above, VMK; below, ΝΕΩΚΟ.

AE. 28 mm. Cf. Mionnet III, p. 629, No. 445.
PLATE VIII.

44 A TARSUS COIN COLLECTION

186. Same as No. 185, but no star.

Rev. Same type.

AE. 26 mm. PLATE VIII (Rev.)

SEPTIMIUS SEVERUS

187. AVT KAIACEΠ CEVHP . . . Bust r., laureate; in field, Π Π

Rev. TPOΠO AEOC Flaming altar inscribed: CEVHPIA

O[AY]MΠI

A[EΠ]INI

K[IA]OPO

[ICK]IAI

in field to r., and l., Γ B.

AE. 36 mm. PLATE IX (Rev.)

Kubitschek (*Num. Zeit.*, XXVII, p. 87 f.) and Ramsey (*Bulletin de Correspondence Hellenique*, XXII, p. 237 f.) have both discussed similar inscriptions. Games called Σευήρεια 'Ολυμπία 'Επινετικά were presumably established to celebrate the victory of Severus over Pescennius Niger in 194 A. D. and held at the Ὀροί Κιλικών.

CARACALLA

188. . . . M AYP CEVHPOC AN Bust r., laureate; in field, Π Π.

Rev. ANTONIAN in exergue, TAPCOV. Wolf r., suckling twins. In field above, ΔΕΚ.

AE. 35 mm. *Jour. int. d'arch. num.* VI, p. 256. PLATE IX (Rev.).

Professor Hubble suggests that ΔΕΚ, found also on other coins of Caracalla, should be completed to

read Δ(ημιουργίας) Ε(λεύθερω) Κ(οινοβουλῳ). (Cf. *Le Bas-Waddington* III, No. 1480.)

189. AVT KAI M AVP CEVHPOC ANTΩNEIN
OC CEB Bust r., wearing crown and garment of demiourgos; in field, Π Π.

Rev. ANTΩNIAN HC CEVHP AΔPIAN, in exergue, TAPCOV above Γ B. Perseus standing r. holding statuette of Apollo Lykeios, meeting fisherman who holds long rod with fish at one end and a basket at other; in r. field, AMK.

AE. 34 mm. PLATE IX.

The type is discussed by Imhoof-Blumer (*Journal of Hellenic Studies*, 1898, p. 177), but he does not give the type for any emperor earlier than Alexander. Nor does he find any explanation of the scene other than that it probably depicts some forgotten local myth.

190. Same as No. 189.

Rev. Same inscription. Koinoboulion enthroned l., holding two decastyle temples; in l. field, A Γ vertically; in r. field, M K above B.

AE. 33 mm. Woodward, *Num. Chron.*, 1925, p. 317, No. 41

191. Same as No. 189.

Rev. TAPCOY ΜΗΤΡΟΠΟ In exergue, AMK ΓB. Lion r. attacking kneeling bull to r.

AE. 35 mm. Mionnet, *Suppl.* VII, p. 271, No. 457. PLATE IX.

This reverse type was the badge of the city in use on coins of the fourth century B. C., and re-adopted as a type more than five hundred years later in the time of Caracalla.

MACRINUS

192. AVT K ΜΟΠΕCEV ΜΑΚΡΙΝΟC Bust r., laureate.

Rev. TAP M[H]TP KTIC THC Herakles reclining l.; r. hand resting on club, l. elbow on lion's skin spread on ground.

Billon didrachm. 5.915 gr. PLATE IX.

Other billon didrachms of Macrinus for Tarsus are known. They are of the type of the seated Tyche, a type also adopted by Caracalla on didrachms of Tarsus. Sandan, and later his counterpart Herakles, is characteristic of Tarsus silver. Sandan is represented on the earlier coinage, both autonomous and Seleucid, and in imperial times on the coins of Domitian and Hadrian. In the time of Hadrian, Herakles begins to supplant Sandan on both bronze and silver, appears in many guises and at most of his various labors until, in the reign of Gordian, Sandan again appears and on the subsequent imperial coinage usurps the place of Herakles.

This coin is, so far as I know, the only representation on the Tarsus coins of the reclining Herakles, and the only one on which he is called *Κτιστης*. Although numerous coins with Herakles types attest his intimate association with the city there seems to be little literary evidence pointing to him as the actual founder of Tarsus; only Dio Chrysostom (Or. XXXIII, 47) calls him 'ο 'αρχηγός 'Ηρακλης.

193. AVKA ΜΟΠΕCEY ΜΑ[ΚΡΕΙΝ]ΟC Bust r., laureate.

Rev. CEVH ΜΑΚΡΕΙ ΝΙΑΝΗC TAP Zeus

Nikephoros seated l., eagle at his feet; in r. field, Γ over Β; in exergue, ΑΜΚ.

ΑΕ. 32 mm. Mionnet III, p. 636, No. 488.
PLATE IX (Rev.).

194. ΑΥΤ ΚΑ . . . ΟΠΕ ΣΕΥΜΑΚΡ . . . Bust r., laureate; Π Π in field.

Rev. ΣΕΥΗΜΑΚΡΕΙΝΙΑΝΗC ΤΑΡΧΟΥ Helios, nude, wearing radiate crown in galloping quadriga l.; in field, above, ΑΜΚ.

ΑΕ. 34 mm. PLATE IX (Rev.)

ELAGABALUS

195. . . . ΥΠΑΝΤΩΝΕΙΝΟC CΕΒ Bust r., laureate.

Rev. ΤΑΡΧΟΥ ΤΗC ΜΗ Athena, holding Nike, seated l. on throne; l. hand resting on spear; shield beside throne.

ΑΕ. 29 mm. PLATE IX.

196. . . . ΚΑΙ ΜΑ . . . ΑΝΤΩΝΕΙΝΟC C Head r., laureate.

Rev. ΤΑΡΧΟΥ ΤΗC ΜΗΤΡΟΠΟΛΕΩC In central wreath, ΔΗ ΜΙ.

ΑΕ. 27 mm. PLATE IX (Rev.).

The letters here, ΔΗΜΙ in the wreath should be interpreted as an abbreviation for ΔΗΜΙΟΒΡΓΙΑ, a title known to have been held by this city in the time of Caracalla (see coin No. 178) and in the time of Elagabalus given not only to Tarsus but also to Anazarbus. Cf. *Zeit. f. Num.*, Vol. XXXIX, pp. 328 f.

SEVERUS ALEXANDER

197. A . . . HPOCΑΛΕΪΑ Bust r., laureate; in field, Π Π.

Rev. CΕOVHP . . . ΑΛΕΪ·TAPCOY The emperor standing l., holding long scepter, sacrifices at blazing altar before him; behind him, Nike on orb advances l., holding wreath in raised r. hand to crown him. Above, in *tabella ansata*, AMKΓB. In exergue, MHTP.

AE. 38 mm. PLATE IX (Rev.)

MAXIMINUS

198. AVT·K·Γ·IOV·OVH MAΞIMEINOC C
Bust r., laureate. In field, Π Π.

Rev. TH·MHTPOΠOΛ , in exergue TAPCOY Athena, head r., standing in quadriga to front. In field, AM K above; Γ B below.

AE. 37 mm. Cf. B.M.C., *Lycaonia*, etc., p. 204, No. 219.

199. Same inscription ending in OC. Bust r., radiate.

Rev. TAPCOV THC MHTPOΠOΛEΩC Bust of City r.; in field, AMK ΓB.

AE. 36 mm. Cf. B.M.C., *Lycaonia*, etc., p. 207, No. 232.

All coins of Balbinus in this collection are of varieties listed in the British Museum Catalogue.

PUPIENUS

200. AVTKAICMKΛ ΠOVΠIHNON CEB In field, Π Π. Bust r., radiate.

Rev. TAPCOV M HTPOΛEΩC In l. field, A K

in r. field, M B Γ vertically. Harpocrates holding cornucopiae standing l. at flaming altar.

AE. 37 mm. *Num. Zeit.* XXI, p. 217, No. 6.
PLATE IX.

GORDIAN III

201. AVT K M ANTΓ OPΔIANOC CEB Bust r.,
radiate; in field, Π Π.

Rev. TAPC OV MH T POΠOΛEΩC Aequitas,
standing, holding scales and cornucopiae; vertically
in l. field, AMK, in r. field, Γ B.

AE. 34 mm. Woodward, *Num. Chron.*, 1925, p.
328, No. 122. PLATE X (Rev.)

202. Same as No. 201.

Rev. Inscription same. Archieratic crown with
double series of heads placed on table with three
legs; in outer series, seven heads; in inner series, six
heads; between legs of table, AMKΓB.

AE. 37 mm. Cf. B.M.C., *Lycaonia*, etc., p. 220,
No. 290.

203. Same as No. 201. Bust r., radiate, holding
shield and spear; in field, Π Π.

Rev. Inscription illegible. Similar, but four heads
in outer series between the letters AMKΓB; in inner
row, five heads with small figures of Nike to r. and l.
of central head. In central space, Λ HT PO in three
lines, between legs of table, ΠO ΛE.

AE. 34 mm. Cf. B.M.C., *Lycaonia*, etc., p. 220,
No. 290.

There are many varieties of this type.

204. Same as No. 203.

Rev. TAPCOV MH T POΠOΛEΩ Emperor

standing l., holding Nike r. on globe; l. hand resting on spear; in l. field, ΑΚΓ, in r. field Μ Β.

AE. 37 mm. Babelon, *Inventaire Waddington*, No. 4674. PLATE X (Rev.).

205. Same as No. 203.

Rev. ΤΑΡ COV ΜΗΤΡΟΠΟΛ Ε Lion attacking bull r.; in field above, Α; in exergue, ΜΚΓΒ.

AE. 35 mm. Cf. B.M.C., *Lycaonia*, etc., p. 219, No. 286 ff.

206. Same as No. 203.

Rev. ΤΑΡ COV ΜΗΤΡΟΠΟΛΩΕ (sic). Same type, l.; in field above, ΑΜΚ, in exergue, ΒΓ.

AE. 28 mm. Cf. B.M.C., *Lycaonia*, etc., p. 219, No. 286 ff.

PHILIP I

207. ΑΥΤ ΚΑΙ ΙΟΒ ΦΙΛΙΠΠΙΟΝ ΕΥΤΕΥC CΕ
Bust r., radiate; in field, Π Π.

Rev. ΤΑΡ COV Μ Η ΤΡΟΠΟΛΕΩC Tyche holding rudder and cornucopiae, standing with head l.; in l. field, ΑΜΚ, in r. field ΓΒ vertically.

AE. 34 mm.

208. Same as No. 207.

Rev. ΤΑ Ρ COV Μ C ΑΜ Herakles standing to front, head l., over l. arm, lion's skin; r. hand resting on club; to l., tree with apples; in l. field, ς, in r. field, ϗ ϗ.

AE. 33 mm. Woodward, *Num. Chron.*, 1925, describes a coin of Philip (p. 333, 158) showing Herakles holding apples, but without the tree. PLATE X.

209. Same as No. 207.

Rev. ΤΑΡ COV ΤΗ CΜΗΤΡΟΠΟΛΕΩC Emp-

error on horse galloping r., spearing lion; around in field, AMKBΓ.

AE. 34 mm. Babelon, *Inventaire Waddington*, No. 4677. PLATE X (Rev.).

PHILIP II

210. AVTKAI IO . . . ΛΙΠΠΙΟΝ ΕΥΤΕΥC CE
Bust r., radiate; in field, Π Π.

Rev. TA PCOY THC ΜΗΤΡΟΠΟΛΕΩC Herakles raising Antaios from the ground; in l. field, B, in r. field vertically AMKΓ.

AE. 36 mm. PLATE X (Rev.).

OTACILIA

211. ΩΤΑΚΙΑC . . . ΠΑΝ ΕΥΤΕΥC CEB Bust r.

Rev. TAPCOY M HTPOΠOΛEΩC Nike on globe l.; in field, vertically, AMK and ΓB.

AE. 31 mm. Mionnet III, p. 651, No. 582. PLATE X (Rev.).

TRAJAN DECIUS

212. AVT K Γ ΜΕCΚ ΔΕΚΙ ΤΡΑΙΑΝΟC Bust
r., laureate.

Rev. TAPCOV ΜΗΤΡΟΠΟΛΕΩC around; A MK in two lines within wreath.

AE. 22 mm. Babelon, *Inventaire Waddington*, No. 4682. PLATE X (Rev.).

213. AVK EK ΜΕC ΔΚΟV ΔΕΚΙΤΡΑΙΑΝΟC CE
In field, Π Π. Bust r., laureate.

Rev. Inscription of No. 212. Nike l., on globe; in field vertically, AMK and ΓB.

AE. 29 mm. PLATE X (Rev.)

214. Same inscription as No. 212. In field, Π Π.
Bust r., radiate.

Rev. Same inscription. Perseus and fisherman, very similar to No. 189 of Caracalla; in field above, AM K; letters in exergue illegible.

AE. 33 mm. Imhoof-Blumer, *Journal of Hellenic Studies*, 1898, p. 178, No. 50 and Woodward, *Numismatic Chronicle*, 1925, p. 334, No. 166.

215. AVT KAI Γ ΜΕC KVIN ΔΕΚΙ . . . AN In field, Π Π. Bust r., radiate.

Rev. TAPCOV . . . ΡΟΠΟΛΕΩC ΕΒ Herakles, nude, standing facing, head l.; r. hand resting on club; in l. hand, lion-skin; in field, AM K.

AE. 34 mm. Cf. Mionnet III, p. 652, No. 588. Plate X (Rev.)

216. AVKEΓ ΜΕC KOV ΔΕΚΙOC TPAIANOC ΕΒ In field, Π Π. Bust r., radiate.

Rev. TAPCOV ΜΗΤΡΟΠΟΛΕΩC Γ Β In exergue, AMK. Herakles standing r. holding infant Telephos, who leans down to fondle stag; behind, a tree.

AE. 34 mm. Woodward, *Numismatic Chronicle*, 1925, p. 334, No. 165. PLATE X (Rev.).

VALERIAN JR.

217. AVK ΛΙ ΠΟΥΛΙ ΟΥΑΛΕΡΙΑΝOC C Bust r., radiate; in field, ΠΠ. Countermark: spread eagle on palm branch, head r.

Rev. TAPCOV ΜΗΤΡΟΠΟΛΕΩC Zeus Nikephoros seated l.; in field, ΓΓ; in exergue, AMK.

AE. 33 mm. Babelon, *Inventaire Waddington*, No. 4689. PLATE X.

SALONINA

218. ΚΟΡΝΗΛΙΑΝΟ ΑΛΩΝΙΝΑΝΟ Bust r., crescent at shoulders. Whole in wreath.

Rev. ΤΑΡΧΟΝ ΜΗΤΡΟΠΟΛΕΩ Kybele enthroned r., at her feet, two lions l.; in l. field, ΑΜΚ; in r. field, ΓΓ vertically.

ΑΕ. 30 mm. Cf. B.M.C., *Lycaonia*, etc., p. 230, No. 329. PLATE X.

This seems to be the work of the same die-cutter who prepared the dies for the coin of Valerian at Anazarbus, with reverse of Valerian and Gallienus seated (PLATE X, A). There are two of this type in the collection, one of which is illustrated for comparison of style. The flans are also similar and distinctive, unusually thick with a sharply cut squared edge.

ZEPHYRIUM

First Century B. C. to Early Imperial Times

219. Head of City-goddess r.

Rev. ΖΕΦΥΡΙΩΤΩΝ Athena seated l., holding Nike; in field, Π above Α.

ΑΕ. 19 mm. Cf. B.M.C., *Lycaonia*, etc., p. 232, No. 3 ff. PLATE XI.

220. Head of Tyche r.

Rev. ΖΕΦΥΡΙΩΤΩΝ Bunch of grapes.

ΑΕ. 13 mm. PLATE XI.

ANTONINUS PIUS

221. ΑΔΡΙΑΝΟΠΟΛΕΩ Head r., bare.

Rev. ΖΕΦΥΡΙΩΤΩΝ ΑΔΡΙ ΑΝΟΠΟΛ . . . Ν
Zeus Nikephoros seated l.

54 A TARSUS COIN COLLECTION

AE. 25 mm. Cf. B.M.C., *Lycaonia*, etc., p. 233,
No. 10. PLATE XI.

MARCUS AURELIUS

222. AVT KAIC M AVPHA . . . ANTΩNINOC

CEB Head r., laureate; in field, ΠΠ.

Rev. ΑΔΡΙΑΝΟΠΟΛΕΙΤΩΝ ΣΕΦΥΡΙΩΤΩΝ

Zeus seated l., holding patera and scepter.

AE. 27 mm. PLATE XI.

CYPRUS

SALAMIS

c. 331–310 B. C.

NIKOKREON

223. Head of Herakles r., in lion skin.

Rev. Head of Aphrodite r., as City-goddess;
behind head, Ν (?).

AE. 12 mm.

Unfortunately this coin is very worn, and apparently struck with worn dies. This type of Aphrodite is the usual one for the later kings of Salamis; and even on this poor specimen, the characteristic dressing of the hair is unmistakable. Behind the head there appears to be a monogram, not certainly legible but possibly reading Ν. On the obverse is the Herakles head typical of Alexander and his successors. The size of the coin approximates the small bronzes of the Alexander type struck at Salamis, and bearing the letters ΣΑ. It seems possible that this coin was struck by Nikokreon and that he imitated the obverse of the coins of Alexan-

der, whose ally he was and to whom he paid homage at Tyre in 331 B. C.

GALATIA

TAVIUM

Imperial Times

224. Head of Athena r., wearing crested helmet.

Rev. ΤΡΟΚΜΩΝ in exergue. Humped bull butting r.

AE. 15 mm. PLATE XI.

CAPPADOCIA

ARIARATHES IV OR V

225. Head of Athena r. in crested helmet.

Rev. ΒΑΣΙΑ[ΕΩΣΑ] ΠΙΑΡΑΘ[ΟΥ Nike advancing l., crowning the king's name. Serrated edge.

AE. 22 mm. PLATE XI.

Reinach (*Revue Numismatique*, 1886, "Numismatique des Rois de Cappadoce," p. 355) mentions another coin with serrated edge. It is described as:

Helmeted head r.

ΒΑΣΙΑΕΩΣ ΑΡΙΑΡ Athena standing The size also approximates that of this coin.

Mr. Newell showed me two coins from his collection similar to the Adana Museum specimen. They explain the apparently Seleucid fabric. They are both restrikes. On the one, the head of Artemis and Apollo leaning on a tripod can be discerned, and the other appears to be struck over the same type, the familiar coin of Seleucus IV (Babelon, *Rois de Syrie*, Pl. XI, No. 16). This coin is a similar re-

strike. The crumpled effect of the helmet is due to head of Artemis on the earlier type; and the hole in the cheek of Athena is also characteristic of these coins of Seleucus. The type of the reverse is somewhat blurred and the hole obliterated.

These coins must date after the beginning of the reign of Seleucus IV (187–175 B. C.). They may be ascribed to the end of the reign of Ariarathes IV (220–163 B. C.) who minted extensively. I would prefer to assign them to Ariarathes V (163–130 B. C.) after he had regained his kingdom from the usurper, Orophernes, in 157 B. C. Orophernes, on his tetradrachms, discarded the conventional Cappadocian type of Athena or Mâ, choosing Nike to celebrate his success. Ariarathes V may have retaliated by adopting the same type.

CAESAREA

36 B. C.–17 A. D.

226. Head of Hermes, bare, r.; caduceus over l. shoulder.

Rev. ΕΥΣΕ above and ΒΕΙΑΣ below palm branch r. and club l.

AE. 17 mm. PLATE XI.

GETA CAESAR

206 A. D.

227. ΑΥ ΚΑΙ Π ΣΕΠΤΙ ΓΕΤΑΚ ΑΥΤ Head r., laureate.

Rev. Η ΤΡΟΠ ΚΑΙ ΚΑΡΙΑΝ Helios seated l., drapery about lower limbs; in extended r. hand, an olive branch. In exergue, ΕΤ ΙΔ.

AR. Drachm. PLATE XI.

The date is mostly off flan, but ΙΔ appears to be a more probable date than ΙΑ since no silver is known for Caracalla, Domna or Geta for the year 203 A. D.

GETA AUGUSTUS

213 A. D.

228. AV K CЄΠTI ΓETAC AV Head r., laureate.

Rev. MHTPO KAICAPIAC ΝΕΩ Mount Argaeus; on summit, star; in exergue, ЄT Γ.

AR. Drachm. Cf. Sydenham, *Coinage of Caesarea in Cappadocia*, No. 499a. PLATE XI (Rev.).

Although not a new date or type, this presents new varieties for both obverse and reverse legends on drachms for this year.

SEVERUS ALEXANDER

222 A. D.

229. AV K M AVPH CЄOY AΛЄΞANΔ Bust r., laureate.

Rev. MHTPO KAICAPI On altar, agalma of Mt. Argaeus; above, star; altar inscribed, ЄTA. Cf. Sydenham, Nos. 537–39.

229 A. D.

230. AV K CЄOV AΛЄΞANΔ Bust r., radiate.

Rev. MH TPOΠO AЄΩC·K AIC·API AC·ЄT H in six lines within a border of dots.

AE. 23 mm. Cf. Sydenham, Nos. 591–2.

This type is given by Sydenham for the year Z (228 A. D.), but not for H.

GORDIAN III

241-2 A. D.

231. AVTMANT ΓΟΡΔΙΑΝΟC Head r., laureate.
Countermark: head (?).

Rev. ΜΗ ΤΡΟΠΚΑΙ CAPIENTI XABNE ΕΤΔ
in five lines; Mount Argaeus between the first two
letters; all within laurel wreath.

AE. 27 mm. Cf. Sydenham, Nos. 610-613.
PLATE XI (Rev.).

This is a new variety of the many different arrangements of this inscription listed by Imhoof-Blumer (*Revue Suisse*, 1898, p. 21 ff.) where it is explained as a walled city, and second neokoria. He adds that it seems probable that the walls were built or strengthened at this time because of the Persian menace.

TYANA

TRAJAN

102-3 B. C.

232. Head of Trajan r., laureate. In field, Ε TE.

Rev. ΝΕΩΝ Athena standing
l.; Nike in r. hand, l. hand supporting shield and
spear.

AE. 16 mm. PLATE XI.

HADRIAN

136-7 A. D.

233. AVK]AI ΤΡΑΔΠΙ ΑΝΟC CΕΒΑ Head r.,
laureate.

Rev. ΤΥΑΝΕΩΝ ΤΩΝ ΠΡ Τ ΑΙΕΡΑCΥΑΥΤΟ
Club. In field, ΕΤ Κ.

AE. 17 mm. PLATE XI.

The same inscription and date appear on a coin with reverse type of Athena standing left (*Inventaire Waddington*, No. 6805), which is similar to the following, from the year 137-8 A. D.

234. K]AIC TPAI AΔPIANOC CEBAC . . .

Head r., laureate.

Rev. TYANEΩNTIT IEPACYAY Athena standing l.; Nike in r. hand, shield and spear in l. hand; in field, ET KA.

AE. 19. mm. PLATE XI.

CARACALLA

235. . . . VPANTΩN Head r., laureate.

Rev. ANT KOAΩ·TVAN . . . Head of City-Goddess r.

AE. 25 mm. Leake, *Num. Hell., Asiatic Greece*, p. 139. PLATE XI.

236. A·KAI·M·AVP·AN TΩNINOC Head r., laureate.

Rev. ANT KOA . . . NIA TVANA Asklepios and Hygieia standing with Telesphoros between them. In exergue, ET I S.

AE. 30 mm. Sestini, *Descriptio numorum veterum ex museis Ainslie*, etc., p. 490, No. 3. PLATE XI.

These imperial coins appear to throw some light on the question of Cappadocian mints. In the time of Strabo there were but two cities in Cappadocia: Mazaca in Cilicia, and Tyana in Tyanitis (Jones, *Cities of the Eastern Roman Provinces*, p. 178). Of

these, Tyana, situated in a fertile plain on the high-road through the Cilician Gates, was in early times the more important. Here the Cappadocian satrap, Ariasos (?), c. 280 B. C., struck coins inscribed TY or TYAN (Head, *Hist. Num.*², p. 753). Reinach (*op. cil.*, p. 314) attributed them to Ariarames, the father of Ariarathes III, on whose coinage is first found the helmeted goddess, the Cappadocian Mâ (?). On these coins she is seated, but from the time of Ariarathes IV to Ariarathes X, i. e., 220–36 B. C., she is pictured standing left in a never varying attitude. In the time of Trajan, after a lapse of about 375 years, the name of Tyana again appears on coins. In the fifth year of his reign, when possibly some of the late dynastic coins of Cappadocia may still have been current, Trajan issued bronze (B.M.C., *Galatia*, etc., p. 96, No. 2 and No. 232 above) with the type of the Roman Minerva, indistinguishable from the Cappadocian goddess, in an attitude precisely like that on the earlier coins. The same type appeared later in his reign and again under Hadrian (No. 234). From this, one might conclude that the type was typical of the city and that Tyana had served as mint city for the Cappadocian kings down to the time of Archelaus, or throughout the time the helmeted goddess was used on the regal coins.

Archelaus, 36 B. C.–17 A. D., opened a mint at the ancient Mazaca, renamed Eusebia by Ariarathes V. Here autonomous bronze was struck, first with the name ΕΥΣΕΒΙΑΣ, then with ΚΑΙΣΑΡΙΑ. The

latter name was assumed by the city in honor of Augustus sometime between 12 B. C. and 9 B. C. At the same time regal silver drachms bearing the name and portrait of Archelaus were struck. These read ΒΑΣΙΛΕΩΣ ΑΡΧΕΛΑΟΥ ΦΙΛΟΠΑΤΡΙΔΟΣ ΚΤΙΣΤΟΥ. On the basis of the word ΚΤΙΣΤΟΥ, which Eckhel plausibly explained as a title assumed by Archelaus when he rebuilt Elaeussa-Sebaste and there founded his residence, Imhoof-Blumer (*Revue Suisse*, 1898, p. 1 ff.) has suggested that these coins were minted on that island. There is no numismatic evidence to disprove Eckhel's explanation of ΚΤΙΣΤΗΣ, although, as Reinach has pointed out, it would be more convincing if there were any assurance that the title was not assumed until after the acquisition of Cilicia Tracheia. Granted, however, that this explanation is correct—and on this point all numismatists seem to agree—the mere presence of the word on the coins is no *a priori* proof that they were struck at Elaeussa. In order to strengthen his argument, Imhoof-Blumer attributed certain silver coins of the early emperors to Elaeussa which are usually ascribed to Caesarea in Cappadocia. Head (*Hist. Num.*², p. 734), Hill (B.M.C. *Galatia*, p. xxxvi, note*) and Wroth (B.M.C., *Lycaonia*, p. lxx, note 4) were not convinced in regard to the imperial coinage, and even Imhoof-Blumer himself became doubtful (*Kleinasialische Münzen*, p. 442). The two types most characteristic of Caesarea which were not usual Roman types, Mount Argaeus and the club, are the types adopted by Archelaus on

his silver. The use of Mount Argaeus as reverse type for the rare hemidrachms of Archelaus, points to Caesarea as the mint city for those coins. It is possible that his drachms were struck elsewhere, but it is improbable that their type, the club, would have survived and persisted so long (through the reigns of Domitian to Commodus) at Caesarea, with no recurrence at Elaeussa. The filleted club in wreath does not go back to these coins for a prototype but is a type not uncommon in Cilicia, found also at Tarsus and Seleucia. In brief, it seems that the dynastic coins of Cappadocia were struck in that province, Tyana serving as mint city from early times to the reign of Archelaus when the mint was moved to Caesarea, where not only autonomous bronze was struck but the regal coinage as well.

SELEUCID KINGS

Antiochus I

278–261 B. C.

237. Head of Athena r., in crested Corinthian helmet.

Rev. ΒΑΣΙΛΕΥΣ above, ANTIOXOY below. Caps of the Dioscuri; below caps, club l. In exergue, ⚡.

AE. 19 mm. Newell, *Western Seleucid Mints*, p. 217, No. 1299. PLATE XI.

There is another similar coin in this collection (PLATE XI, A) but without the club and with the monogram Η. Coins of both types were found

in the Tarsus excavations conducted by Miss Hetty Goldman from 1935–1938.

Antiochus IV

174–164 B. C.

238. Head of Apollo r., hair in long curls.

Rev. ΒΑΣΙΛΕΥΣ ANTIOXOY Athena in crested Corinthian helmet seated l.; in r. hand, Nike; in l. hand, long spear held transversely; shield beside her.

AE. 25 mm. PLATE XI.

It is probable that this is a coin of Antiochus IV. The same obverse is used by Seleucus IV, and a similar reverse by Alexander I. The combination of these two types appears on a coin of Mallus (B.M.C. *Lycaonia*, etc., Pl. XVII, 10) possibly indicating that place as the mint-city for this piece. A similar obverse is found at Adana, and a coin of Soli has a similar reverse.

SYRIA

Antioch on the Orontes

74–3 B. C.

239. Head of Zeus r.; laureate.

Rev. AN]TIOXEΩN THΣ [MHTPO]ΠOΛ[ΕΩΣ in three lines. Zeus Nikephoros seated l.; in exergue, ΗΑΣ.

AE. 20 mm. Cf. B.M.C. *Galatia*, etc., p. 154, No. 21 ff.

The latest of the dated coins of this type in the British Museum Catalogue are for the years 234 and 236, or 78–7 B. C. and 76–5 B. C.

Laodicea-ad-Mare

2-1 B. C. (?)

240. Head of Helios r.

Rev. IOYΛIEΩN TΩN KAI in two lines to r. ΛAOΔIK[EΩN to l. Artemis standing l., holding bow and spear; in r. field, ΙΔ; in exergue, ZM.

AE. 23 mm. Cf. Pellerin, *Recueil de Médailles*, Vol. VI. (*Rois*), p. 101 and Pl. XII. PLATE XII.

GABALA

Septimius Severus

197-8 A. D.

241. Inscription illegible. Bust r., laureate.

Rev. Γ]ΑΒΑΛΕΩΝ in exergue. Distyle Ionic temple, within which a goddess (Astarte?) wearing chiton and stephane, stands facing, head r.; in r. hand, scepter; at her feet, two lions. In r. field. ΕΤ[?]ΕΛC.

AE. 25 mm. PLATE XII.

Julia Domna

197-8 A. D.

242. CΕBA CTA IOYΛΙΑ[Δ]OMNA Inscription begins below the bust which faces r.

Rev. Γ]ΑΒΑΛΕ[Ω]N to l., ΕΛCZH to r. Within distyle shrine, turreted bust of Tyche r., on base. (Similar to the Tyche of Laodicea.)

AE. 25 mm. PLATE XII.

The ZH, on the basis of Macdonald's interpretation of the dates on Syrian coins (*Numismatic Chronicle*, 1903, p. 110), would be the seventh and eighth months in the year.

The coin of Domna illustrated in the B.M.C., *Galatia*, etc., Pl. XXVIII, 12, appears to have the same date; the ZH can be deciphered but the rest of the inscription is obliterated.

HIEROPOLIS

Severus Alexander

243. AVT KAIMAP AVP C AΛEEAN

Bust r., radiate.

Rev. ΘΕ[ACCVPIACIEΡΟΠ]ΟΛΙΤΩΝ Atargatis seated l. on lion walking r.

AE. 28 mm. PLATE XII (Rev.).

A similar coin in the Hunter collection (Pl. LXI, 25) shows lion walking l.

ANTIOCH-ON-THE-EUPHRATES

Lucius Verus

244. AVTOKPATOPAKAICAP [AVPHAION OVHPON] Bust r., laureate.

Rev. ANTIOXEΩ[N ΠΡΟC ΕVΦΡΑΤΗ] Bust of Athena l., in crested Corinthian helmet.

AE. 22 mm. Cf. Mionnet V, p. 111, No. 4. PLATE XII.

A piece of this type described by Mionnet has the Athena bust r.

GABA

Hadrian

122/3 A. D. (?)

245. . . . TPAI · AΔPIANOC CEB Head r.,
laureate.

Rev. ΚΛΑΥΦΙ Nike l., with wreath and
trophy; in r. field, $\overline{\text{HOP}}$.

AE. 25 mm. PLATE XII.

The exact era of Gaba is uncertain but falls between the years 64 and 52 B. C. and a date about the year 60 B. C. has been generally chosen. Not many coins of Gaba are known and those are not well preserved. Sestini, *Descriptio Numorum Veterum* p. 530, No. 1, described a coin of Trajan with Nike to left holding a trophy and the date $\overline{\text{AOP}}$ or 171. De Saulcy, in his *Numismatique de la Terre Sainte* p. 341, No. 2, cites that coin as well as a coin of Hadrian, p. 341 (Pl. XIX, 4) in every respect similar to the Adana Museum specimen except that the date is $\overline{\text{ZOP}}$, 177, not 178.

If we assume the year 56/5 B. C. as the era of Gaba, the coin of Trajan will have been struck in the year 115/6 A. D. when Trajan was conducting his victorious campaign in the East. The choice of Nike carrying a trophy as a type is appropriate to the time and place. Reckoning the years 177 and 178 on the same era, they fall in the reign of Hadrian in the years 121/2 and 122/3 A. D. At that time, 122/3 A. D., according to Laffranchi, *Numismatische Zeitschrift*, 1926, p. 113 ff., Hadrian was making a triumphal tour in Asia Minor, and it seems not un-

reasonable that in these similar circumstances the same type was revived. No coins for the intervening years are known.

NICOPOLIS IN JUDAEA (?)

246. Illegible inscription. Head of Aurelius (?)
and Verus (?) confronting.

Rev. ΟΠΟΛΕΙΤΩΝ Nike l.

AE. 26 mm. PLATE XII.

The fabric is similar to that of the foregoing.

PLATES

A TARSUS COLLECTION IN THE ADANA MUSEUM

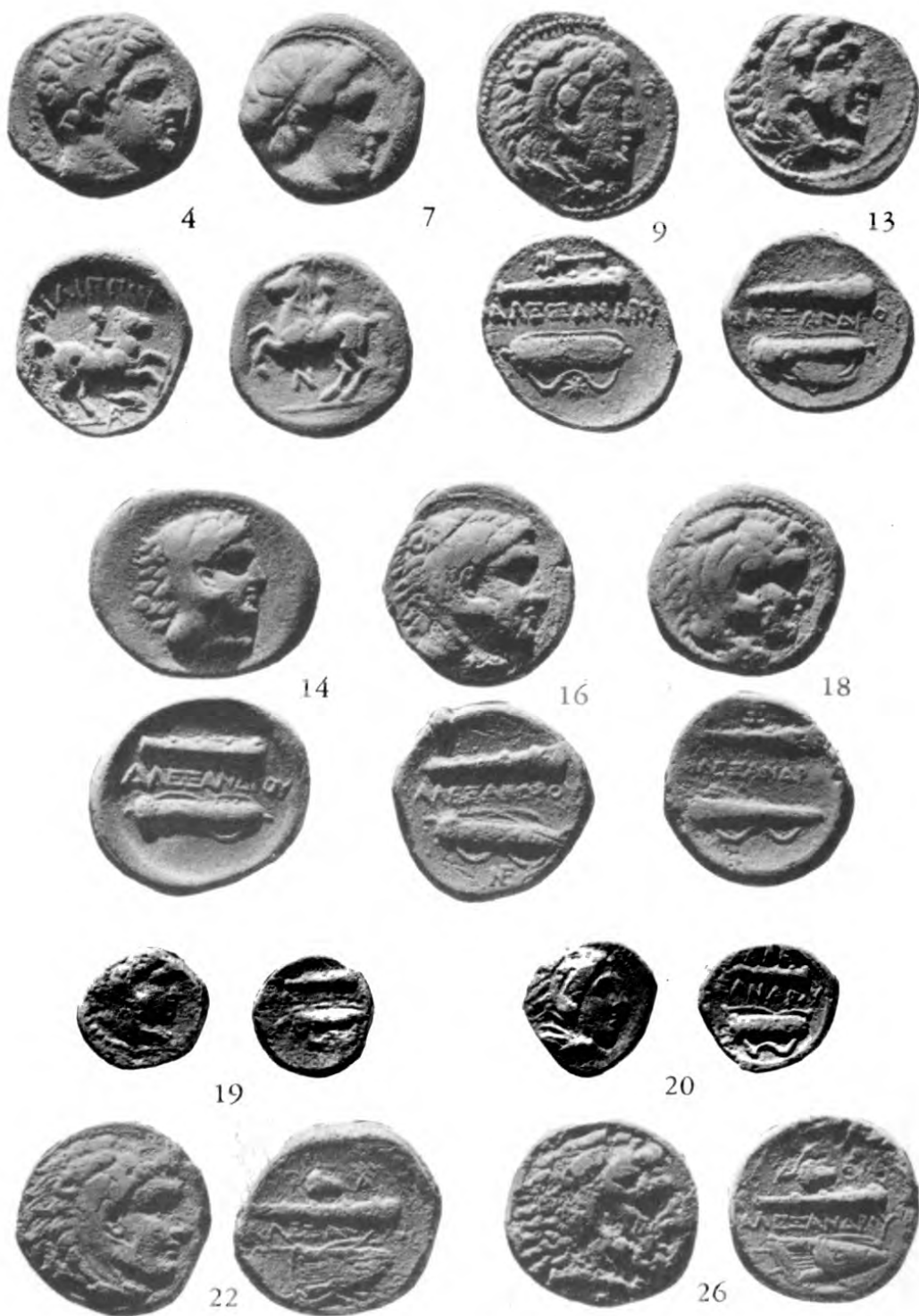


PLATE I



28



32



35



36



40



41



44



45



46



49

A TARSUS COLLECTION IN THE ADANA MUSEUM

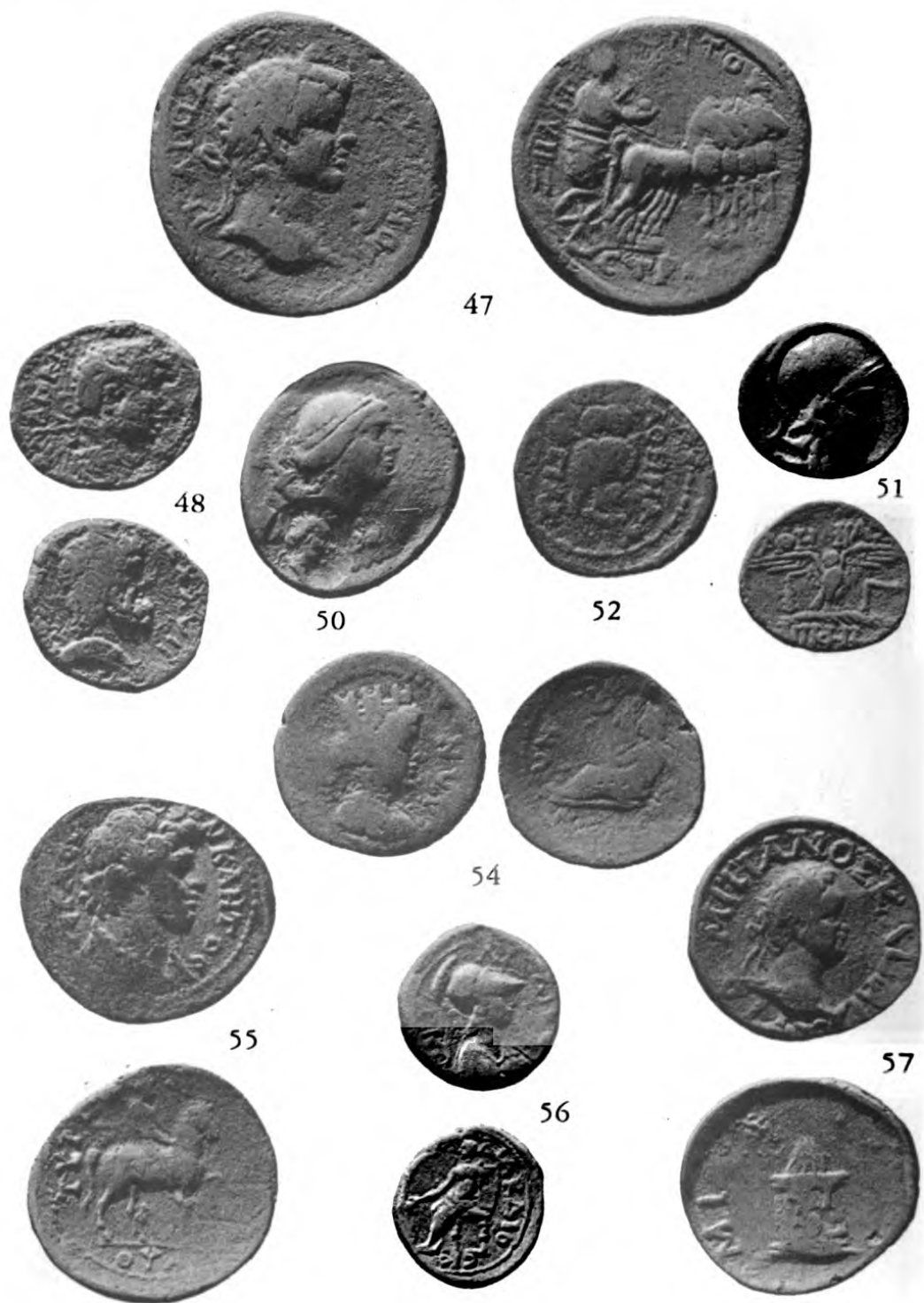


PLATE II



59



60



62



64



65



66



67



A TARSUS COLLECTION IN THE ADANA MUSEUM



68



69



70



71



72



73



74



76



PLATE III



77



78



79



80



81



PLATES

A TARSUS COLLECTION IN THE ADANA MUSEUM

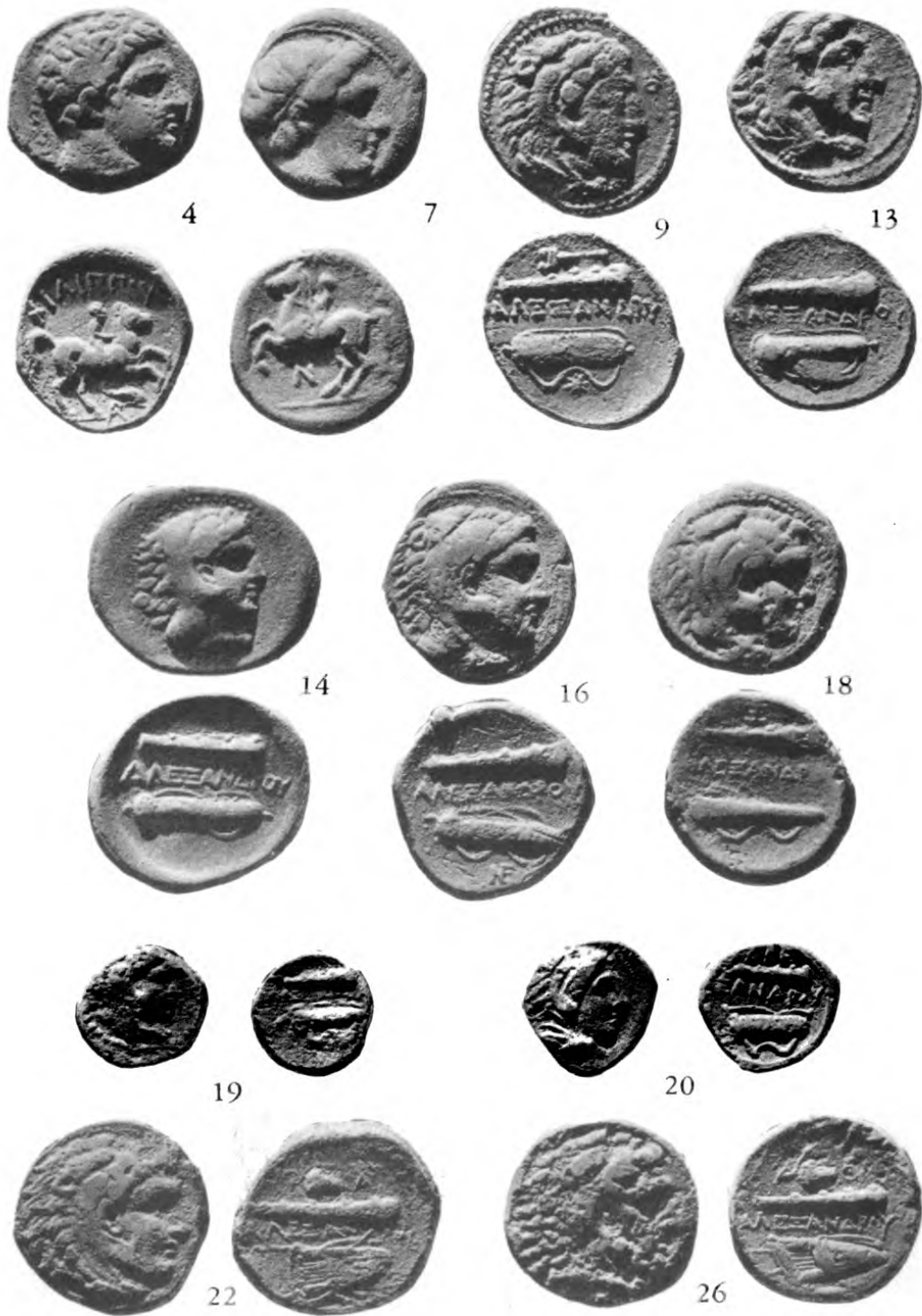


PLATE I



28



32



35



36



40



41



44



45



46



49

A TARSUS COLLECTION IN THE ADANA MUSEUM

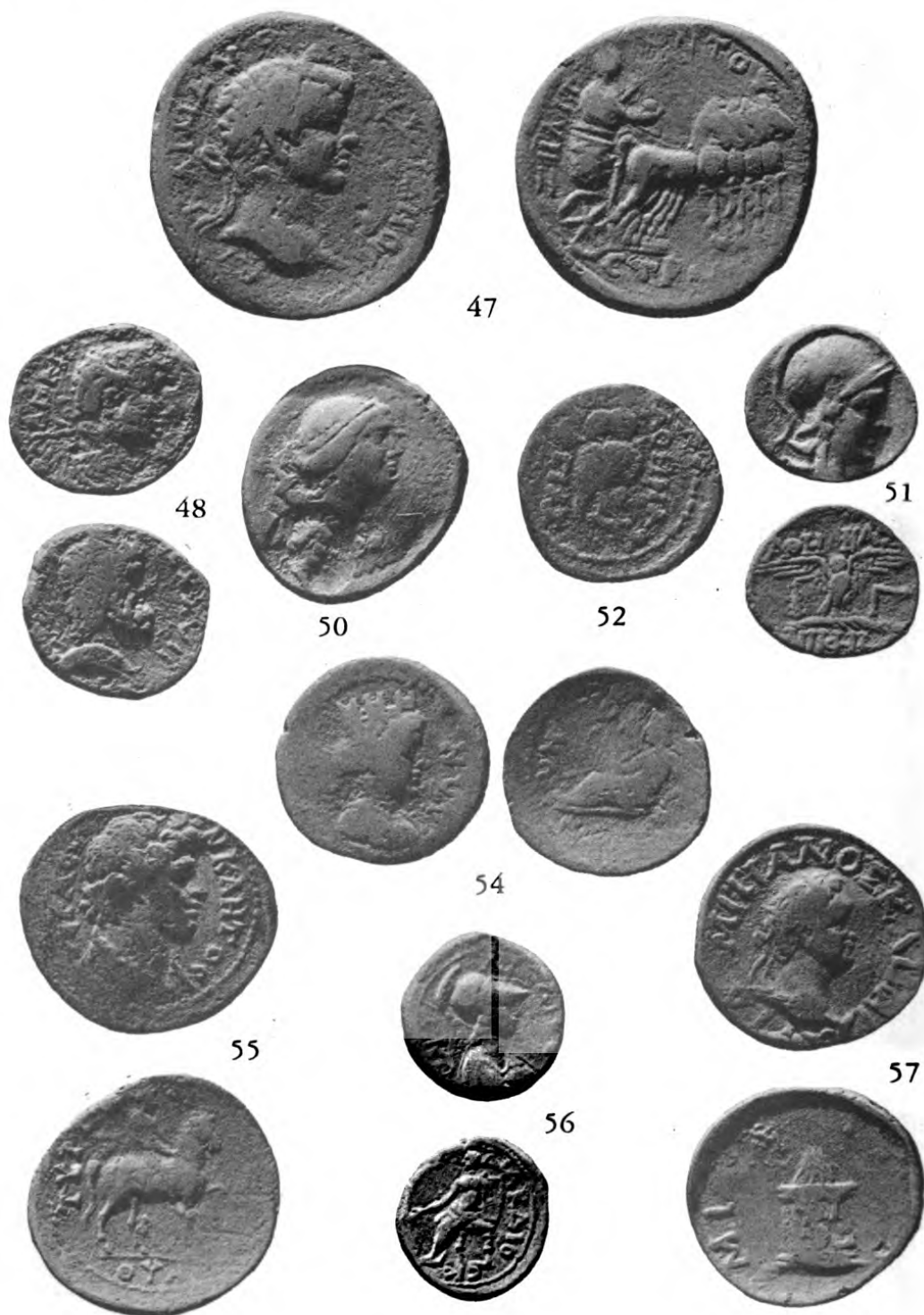


PLATE II



59



60



62



64



65



66



67



A TARSUS COLLECTION IN THE ADANA MUSEUM

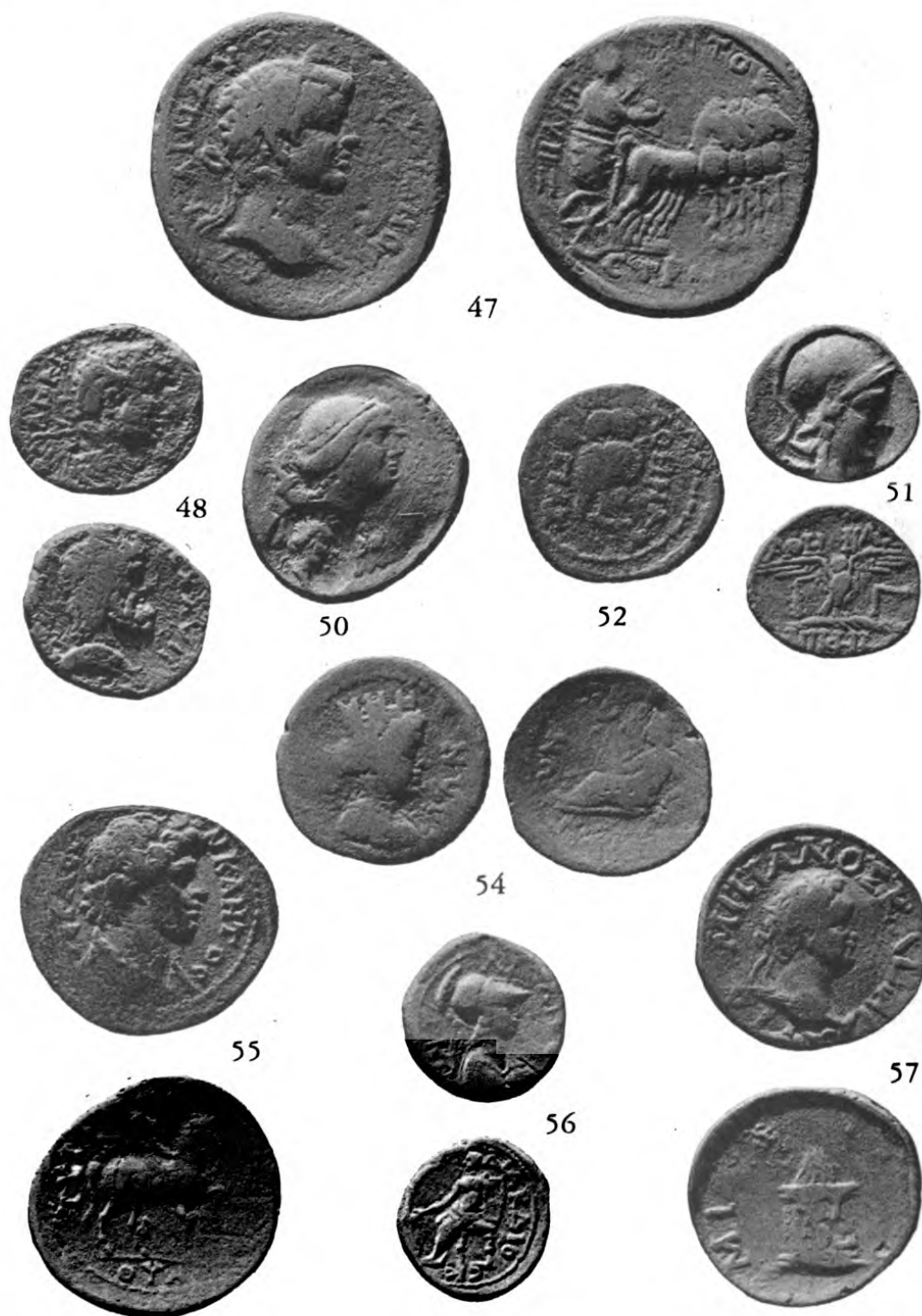


PLATE II



59



60



62



64



65



66



67



A TARSUS COLLECTION IN THE ADANA MUSEUM



68



69



70



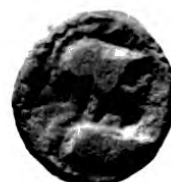
71



72



73



74



76



PLATE III



77



78



79



80



81



A TARSUS COLLECTION IN THE ADANA MUSEUM



PLATE IV



89



90



91



92



94



95



96



97



96

A TARSUS COLLECTION IN THE ADANA MUSEUM

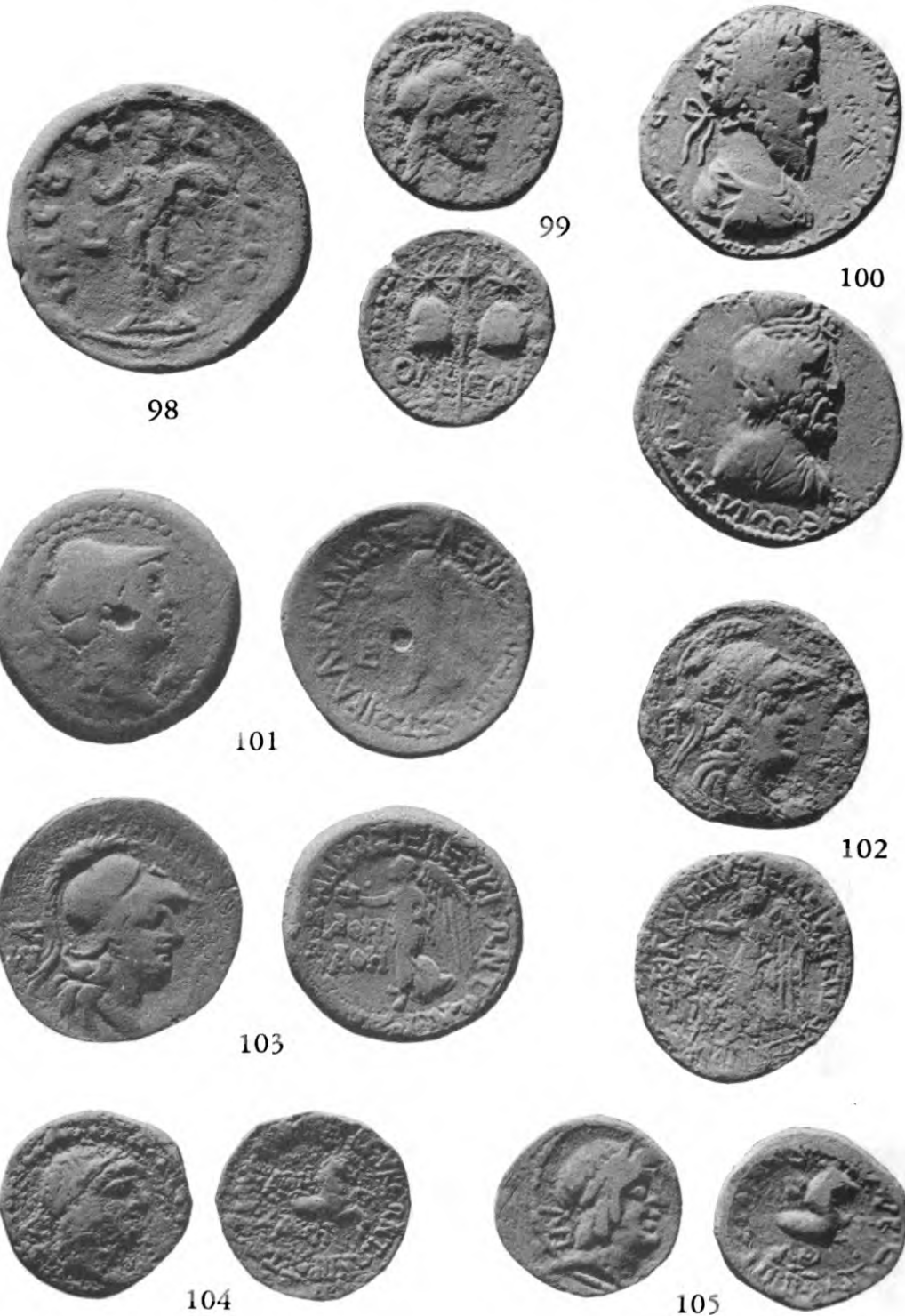


PLATE V



A TARSUS COLLECTION IN THE ADANA MUSEUM



117



119



120



121



122



124



125



126

PLATE VI



A TARSUS COLLECTION IN THE ADANA MUSEUM

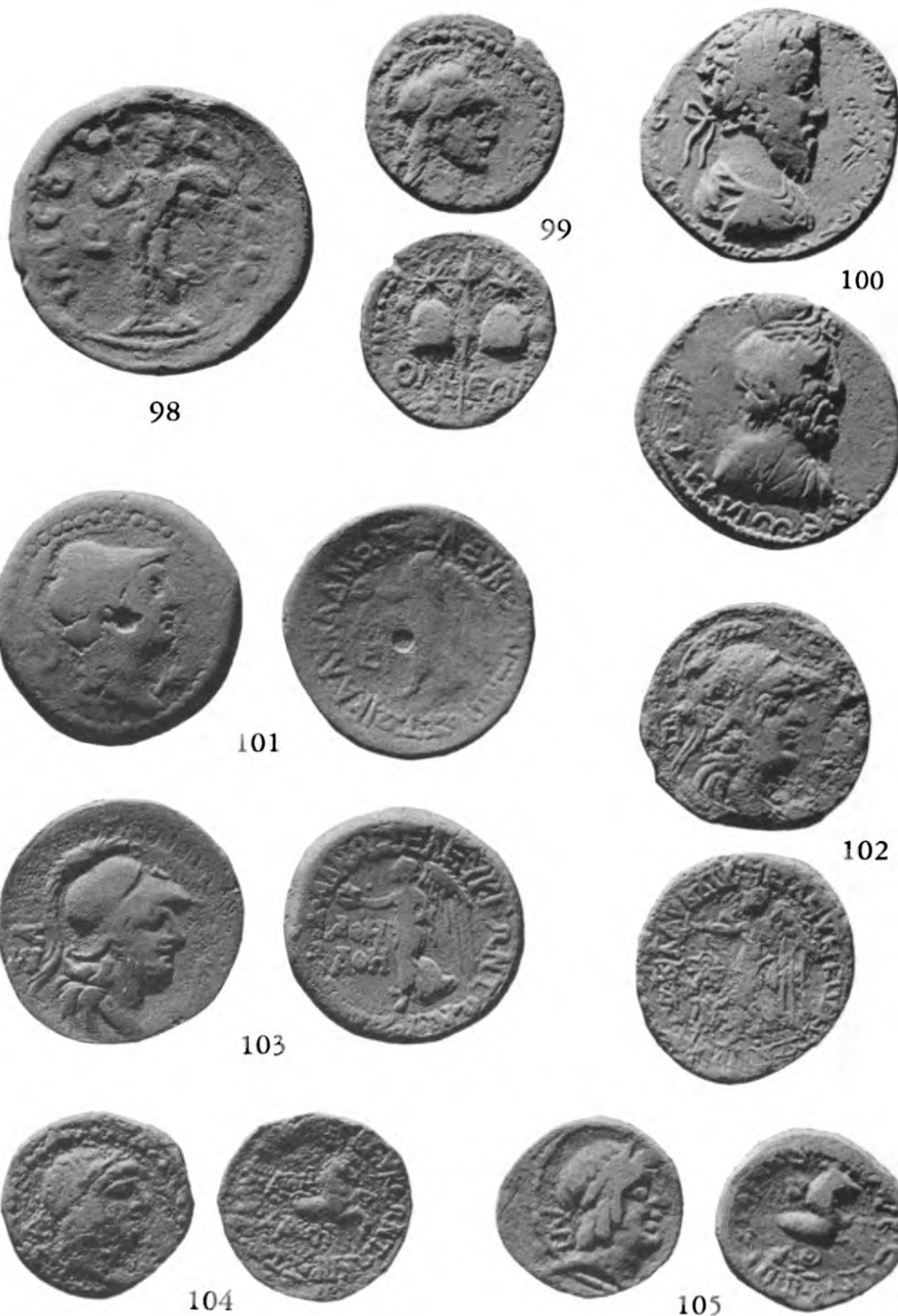


PLATE V



106



107



108



109



110



111



112



113



114



115



A TARSUS COLLECTION IN THE ADANA MUSEUM



117



119



120



121



122



124



126



125

PLATE VI



A TARSUS COLLECTION IN THE ADANA MUSEUM



117



119



120



121



122



124



125



126

PLATE VI



A TARSUS COLLECTION IN THE ADANA MUSEUM



141



142



144



145



148



149



150



152



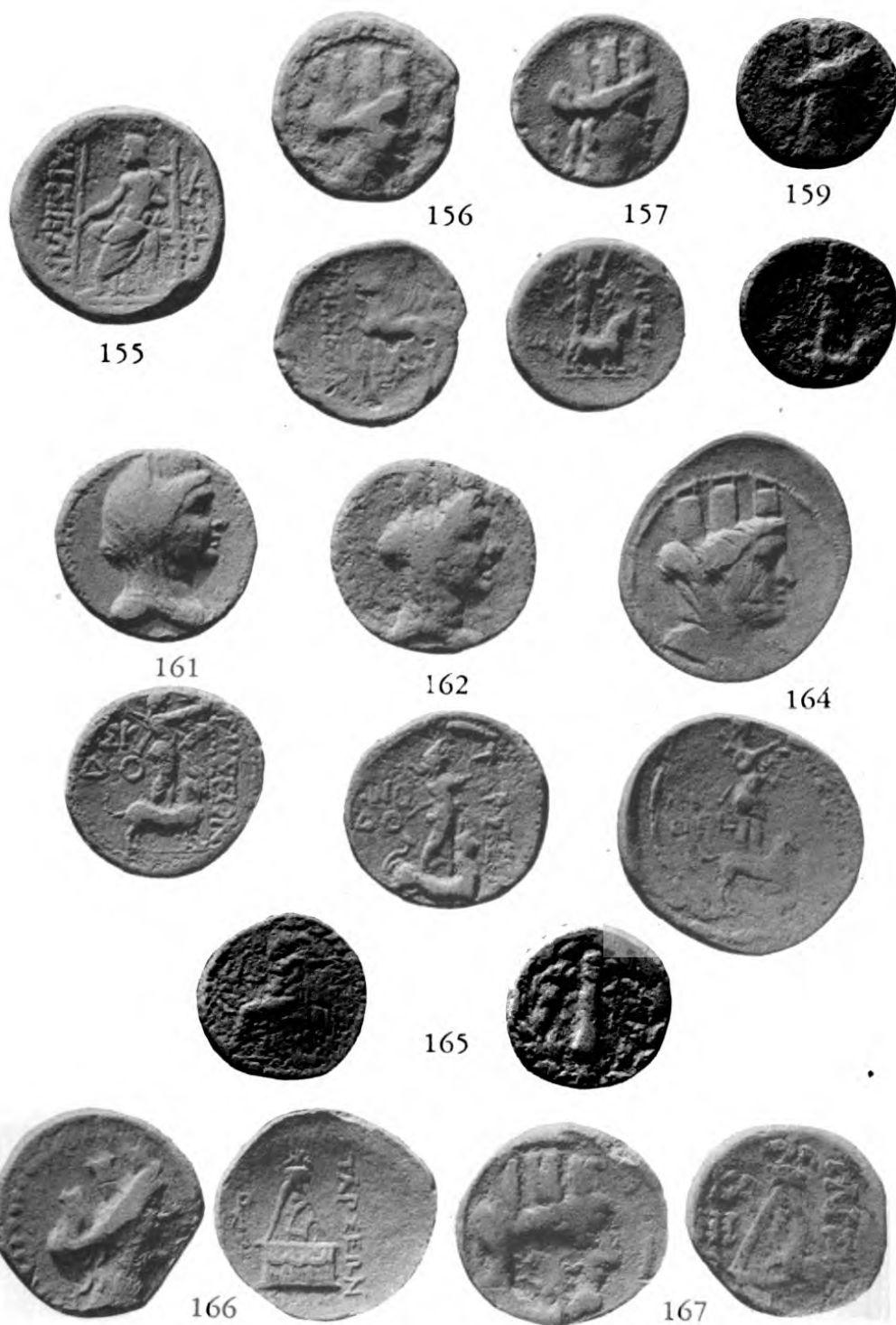
153



154



PLATE VII



A TARSUS COLLECTION IN THE ADANA MUSEUM



141



142



144



145



148



149



150



152



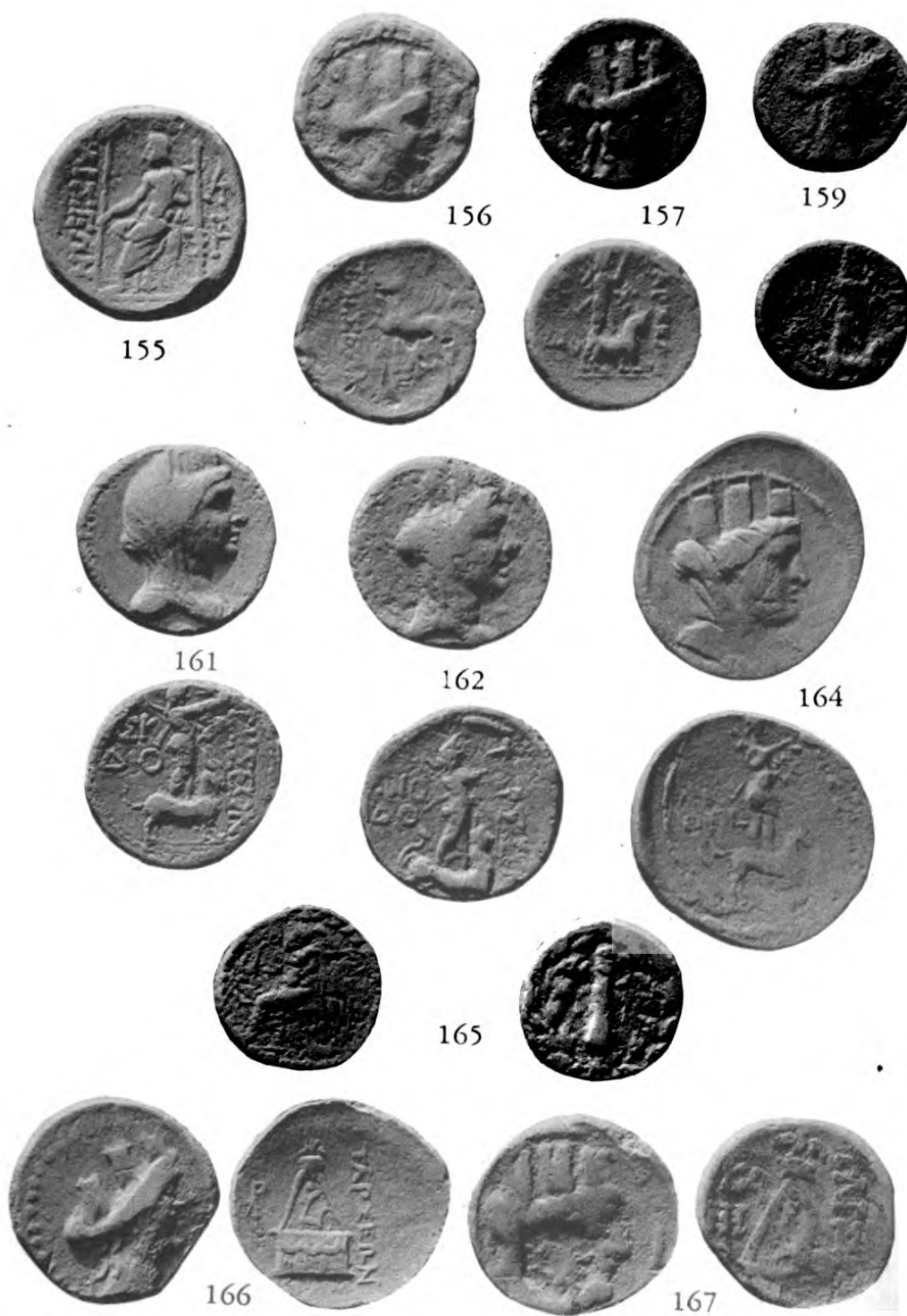
153



154



PLATE VII



A TARSUS COLLECTION IN THE ADANA MUSEUM



168



169



171



172



173



174



PLATE VIII



175



176



177



178



179



180



186



185



A TARSUS COLLECTION IN THE ADANA MUSEUM



187



188



189



192



191



193

PLATE IX



194



195



196



197



200



A TARSUS COLLECTION IN THE ADANA MUSEUM



201



204



208



209



210



211



212

PLATE X



213



215



216



217



217



A



218



218

A TARSUS COLLECTION IN THE ADANA MUSEUM

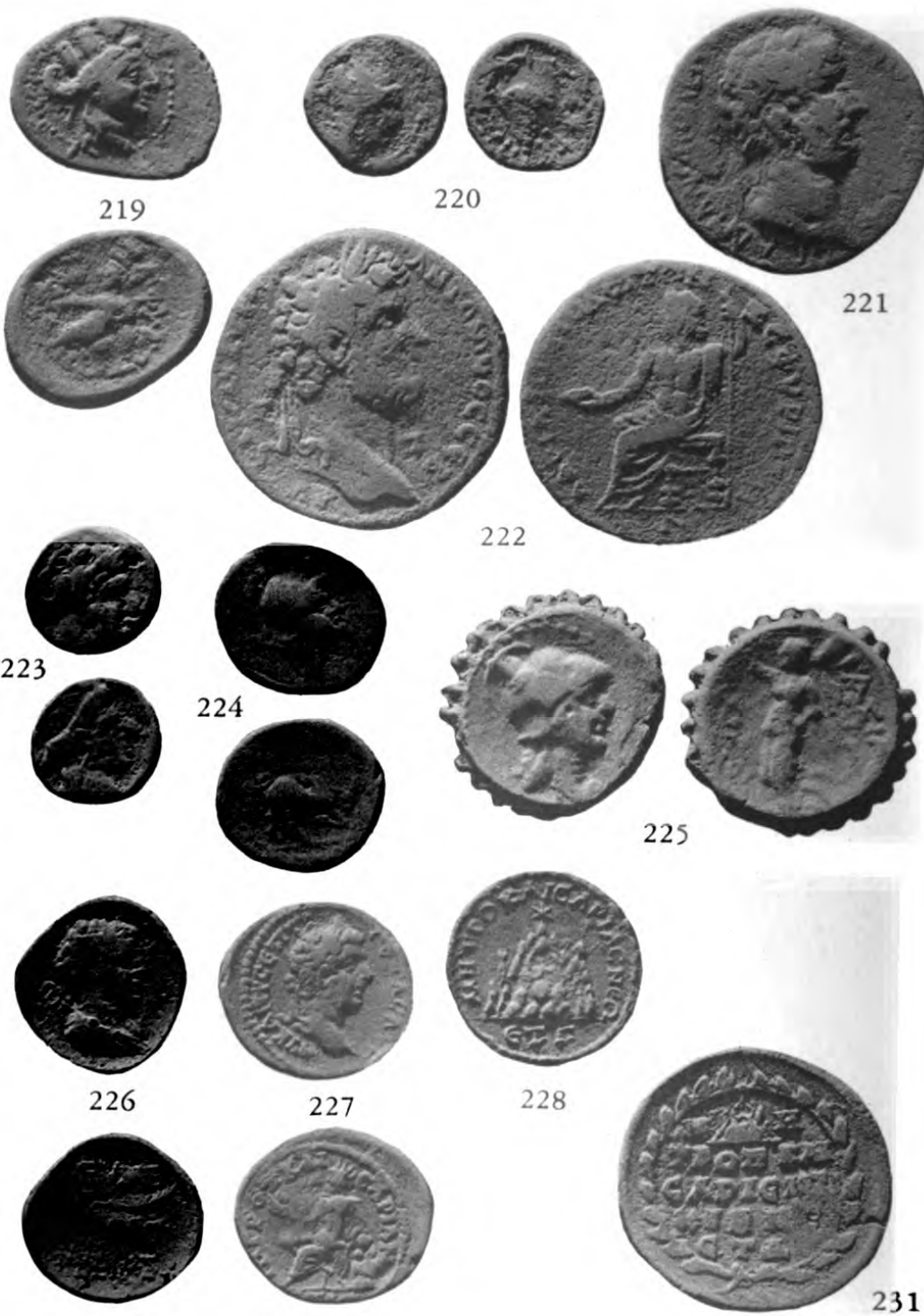


PLATE XI



232



233



234



236



237



A



238



A TARSUS COLLECTION
IN THE ADANA MUSEUM

PLATE XII



240



241



242



243



244



245



246



CU
33
N9

NOV 12 1941

NUMISMATIC NOTES
AND MONOGRAPHS

No. 93



FOREIGN IMITATIONS
OF THE ENGLISH NOBLE

BY

HERBERT E. IVES

THE AMERICAN NUMISMATIC SOCIETY
BROADWAY AT 156TH STREET
NEW YORK
1941

PUBLICATIONS

The American Journal of Numismatics, 1866-1920.

Monthly, May, 1866-April, 1870.

Quarterly, July, 1870-October, 1912.

Annually, 1913-1920.

With many plates, illustrations, maps and tables. Less than a half-dozen complete sets of the Journal remain on hand. Price on application.

The numbers necessary to complete broken sets may in most cases be obtained. An index to the first fifty volumes has been issued as part of Volume LI. It may be purchased separately for \$3.00.

The American Numismatic Society. Catalogue of the International Exhibition of Contemporary Medals. March, 1910. New and revised edition. New York. 1911. xxxvi, 412 pages, 512 illustrations. \$3.00.

Numismatic Notes and Monographs

9. David Eugene Smith, LL.D. Computing Jetons. 1921. 70 pp. 25 pls. \$1.50.
10. Edward T. Newell. The First Seleucid Coinage at Tyre. 1921. 40 pp. 8 pls. \$1.00.
12. Howland Wood. Gold Dollars of 1858. 1922. 7 pp. 2 pls. 50c.
13. R. B. Whitehead. Pre-Mohammedan Coinage of N. W. India. 1922. 56 pp. 15 pls. \$2.00.
14. George F. Hill. Attambelos I of Characene. 1922. 12 pp. 3 pls. \$1.00.
15. M. P. Vlasto. Taras Oikistes (A Contribution to Tarentine Numismatics). 1922. 234 pp. 13 pls. \$3.50.
17. Agnes Baldwin. Six Roman Bronze Medallions. 1923. 39 pp. 6 pls. \$1.50.
18. Howland Wood. Tegucigalpa Coinage of 1823. 1923. 16 pp. 2 pls. 50c.
19. Edward T. Newell. Alexander Hoards—II. Demanhur Hoard. 1923. 162 pp. 8 pls. \$2.50.
20. Harrold E. Gillingham. Italian Orders of Chivalry and Medals of Honour. 146 pp. 34 pls. \$2.00.
21. Edward T. Newell. Alexander Hoards—III. Andritsaena. 1924. 39 pp. 6 pls. \$1.00.
22. C. T. Seltman. A Hoard from Side. 1924. 20 pp. 3 pls. \$1.00.
23. R. B. Seager. A Cretan Coin Hoard. 1924. 55 pp. 12 pls. \$2.00.
24. Samuel R. Milbank. The Coinage of Aegina. 1925. 66 pp. 5 pls. \$2.00.

NUMISMATIC
NOTES AND MONOGRAPHS

NUMBER 93

NUMISMATIC NOTES AND MONOGRAPHS
is devoted to essays and treatises on subjects
relating to coins, paper money, medals and
decorations and is uniform with Hispanic
Notes and Monographs published by the
Hispanic Society of America, and with In-
dian Notes and Monographs issued by the
Museum of the American Indian—Heye
Foundation.

PUBLICATION COMMITTEE

AGNES BALDWIN BRETT, *Chairman*

STEPHEN H. P. PELL

THOMAS O. MABBOTT

EDITORIAL STAFF

SYDNEY PHILIP NOE, *Editor*

SAWYER MCA. MOSSER, *Associate Editor*

FOREIGN IMITATIONS OF THE ENGLISH NOBLE

BY

HERBERT E. IVES



THE AMERICAN NUMISMATIC SOCIETY
BROADWAY AT 156TH STREET
NEW YORK
1941

**COPYRIGHT 1941 BY
THE AMERICAN NUMISMATIC SOCIETY**

THE MERRYMOUNT PRESS, BOSTON, U. S. A.

FOREIGN IMITATIONS OF THE ENGLISH NOBLE

BY HERBERT E. IVES

∴

THE ENGLISH NOBLE AND ROSE NOBLE OR RYAL

THE noble, the chief gold coin of England for more than a hundred years and one of its monetary units for nearly three centuries, was not only original and unique in its type, but was so highly esteemed as to be widely circulated abroad, and to be the subject of numerous copies in other countries. In size and weight it follows the great gold coinage initiated in France in the thirteenth century, but the common types of that coinage—the *chaise*, the *franc-à-pied*, the *franc-à-cheval*, the *mouton*—were not copied. Instead, Edward III, when he started the modern gold coinage of England in 1351 (an earlier coinage of “florins” in 1344, of the type of the French *chaise*, was almost immediately discontinued), put out a new type, showing as its chief feature the figure of the king, with sword and shield, standing in a ship. It has been suggested that this type was chosen to commemorate the naval victory of Sluys. The name “noble” is supposed to derive from the high purity of the gold used.

It is not the intention here to give a detailed account of the English noble, which has been treated exhaus-

tively by English numismatists.¹ As an introduction to the copies made in other countries it is sufficient to note the chief types, with the significant variations which occurred until the last coinage under James I in 1619. Nobles of identical design, differing only in the king's name, were struck by Edward III, Richard II, Henry IV, V and VI, and Edward IV, in the years between 1351 and 1461. The figure of the king in a ship was the constant obverse type; the reverse bore a gothic cross with lions and crowns in the quarters, with, as inscription, an abbreviation of the text "JESUS TRANSIENS PER MEDIUM ILLORUM IBAT" from St. Luke, IV, 30. In the center was the king's initial, E, R, or H. The first obverse inscription of Edward III was "EDWARD DEI GRA REX ANGL Z FRAN DNS HYB." From 1361 to 1369 the title of King of France was dropped, following the treaty of Bretigny, and the inscription was "EDWARD DEI GRA REX ANGL DNS HYB Z AQT," the last letters standing for Aquitaine (No. 1). After 1369 the title of King of France was renewed, together with the lordship of both Ireland and Aquitaine. These nobles were struck at various mints, including, it is surmised, Ypres in Flanders; the only ones indicating their mintage by a difference in design were those of Calais, on which the ship often bore a flag or pennant, and sometimes the letter "C" in place of the king's initial on the reverse (No. 2).

The coinage of Richard II differs only in the king's name; the issues of the three Henrys (No. 3) can be

distinguished from each other only by variations of lettering and minters' marks, except for a change of weight early in the reign of Henry IV, whose rare early nobles are distinguished as "heavy." His "light" nobles and those of the later kings are also characterized by the use of three lys in the French arms, in place of a larger number in the earlier nobles.

Edward IV coined nobles of the type just described for a brief period only (but two specimens are known, with the reverse die altered from Henry VI). He then introduced an altered design, the ryal, or rose noble (No. 4). This continued the king in the ship, but now on the side of the ship is a full-blown rose, and the flag, heretofore peculiar to Calais, becomes a rectangular standard with the king's initial. The reverse is much altered. At the center, instead of the king's initial is a rose superposed on a sun, Edward's emblem adopted after the battle of Mortimer's Cross. The inscriptions remain as before. These rose nobles were struck in large numbers during Edward's first reign (1461-70) and the several mints other than London carry their distinctive initial letter as mint mark in the water beneath the rose, E for York, B for Bristol, C for Coventry, N for Norwich.

Henry VI, during his brief restoration (1470-71), coined no nobles or rose nobles, although he did coin Edward's other new gold coin, the angel. In Edward IV's second reign no rose nobles were coined, nor were they coined by Edward V or Richard III. Henry VII struck ryals (No. 5), of a design different from either

4 FOREIGN IMITATIONS

the nobles or the rose nobles. On these pieces he placed the figure of the king in a ship, with one standard bearing his initial "h"; another a dragon; the ship carries no rose on its side. The reverse type is a large rose filling the whole field, and in the center a shield with, curiously enough, the three fleurs-de-lys of France. Why he used the French arms on these coins is not known; at any rate these ryals were never coined after his first year and only three specimens are known to have survived.

Henry VIII and Edward VI issued no coins with "the king in a ship." The next to appear were ryals coined for one year (1553) by Mary (No. 6), which are the most beautiful coins of the series. They revert to the rose noble type of Edward IV, but substitute for the standing king the figure of the queen with sword and shield. The queen's face is a flattering portrait. The ship is now shown as a blunt-ended vessel, instead of the crescent of the earlier nobles. The obverse inscription includes the date in Roman numerals. The reverse type is again the rose and sun of Edward IV, but the inscription is changed to "A DNO FACTV EST ISTVD Z EST MIRAB IN OCVL NRIS." These coins are extremely rare and were not followed by similar coins with Philip's name added after their marriage (as was done with the silver coinage), nor was the opportunity taken to place both Philip and Mary on the ship—a striking coin indeed!

Under Elizabeth, ryals or rose nobles once more appeared, being struck with several mint or moneyers'

marks, and according to the records, over a considerable period, although they are scarce. On these the rose noble type is followed (No. 7), but the queen appears with orb and scepter instead of sword and shield. On the majority of pieces the face, framed by ruff and crown, is a good portrait. The ship is now a true picture of the vessels sailed by Hawkins and Drake, with high stern and low bowsprit. On the reverse the inscription reverts to the former "JESVS AVTEM" etc. Certain of the Elizabeth ryals have peculiar obverse inscriptions in which occur the letters M P C A L, or M P R C A L. These inscriptions have been a long-standing puzzle. Ruding, in his "Annals of the Coinage of Great Britain" in 1760, quotes² "The learned and ingenious Dr. John Ward" as interpreting these inscriptions as "MAGNAE PROVINCIAE CAPTAE ASPICIIS ILLIVS," believing them to refer to the taking possession of Virginia in 1584 by Raleigh. This interpretation is at the expense of reading the final L as an I, and has not been generally accepted. The latest works on English coins (e.g., Oman, 1936) state that these letters have never been satisfactorily explained. We shall return to this question after surveying the continental imitations of the noble, give the true interpretation of these inscriptions and the proper attributions of the pieces.

The last issue of ryals was in the fourth coinage of James I in 1619 (No. 8). In this issue the ryal, although still of approximately the size of the original noble, valued at six shillings and eight pence, was the

half sovereign, or fifteen-shilling piece, illustrating the change of values of the noble metals in the course of three centuries. These James ryals are substantially rose nobles, with the king now shown carrying the shield of Great Britain, bearing the English, French, and Scottish arms. The face is an excellent and unmistakable portrait, the ship a good representation of the man-of-war of the period. The reverse inscription copies that of Mary "A DOMINO FACTVM EST" etc. These last nobles could not have been struck in very large numbers as they are very scarce, and with them the denomination disappears. It is to be regretted that a type so suitable to the "mistress of the seas" could not have continued through the times of Blake, Rodney, Nelson and more recent naval heroes, exhibiting the naval architecture and the costumes of their times.

IMITATIONS OF THE NOBLE³

The gold noble had a wide popularity in northeastern Europe, being "of as much note as the Florin and Ducat in the Southern parts."³ Snelling records that for several centuries the tolls of the Sound were payable in nobles, and that obligations, payments, etc. were often stipulated to be paid in these pieces, instead of being in marks of silver as had been the custom before. It circulated in Russia, where it had a special name meaning "ship coin." Counterstamps of continental cities are found; a specimen in the British Museum has the counterstamp of Danzig. A noble of Henry VI, with the

dated counterstamp of Haarlem, 1572, illustrates not only the wide circulation of these pieces, but the extended period during which they were in use.⁴ There is little doubt that close copies, often of inferior weight and purity, were made in continental Europe, as illustrated by hoards of pieces of coarse workmanship or blundered legends, such as one of Henry nobles found near Cologne,⁵ and evidently coined there.

We are however primarily concerned with imitations which differ from "counterfeits" in being more or less close imitations of the type, while being bona fide coinages of localities outside England. We thus start our survey with the country closest to England in the fourteenth century, which was the part of France occupied by England. France itself never copied the noble, just as England never copied the distinctive French types. In Aquitaine, however, where the French types were closely copied, there appears a noble of Edward, the Black Prince (No. 9). This piece is identical in type with the English noble of Edward III, with the sole difference that the obverse inscription reads "ED P GNS REGIS ANGLIE PRINCPS AQVITANIE." This coinage was evidently soon abandoned, for only a single example has been found. Nor was it revived after the conquest of France by Henry V, who initiated an Anglo-Gallic coinage distinctly different from both the English and the French coinages.

Proceeding now to the north, we find the Scots striking nobles under David II (1327-71). David, who was

a prisoner in England for many years, being released in 1357, carried back with him many English ideas. He initiated the issue of silver groats in Scotland, and his nobles (No. 10) were apparently part of the same monetary project. They correspond in weight and style with the fourth issue of Edward III. The obverse differs from the English coin in the king's shield, which bears the lion of Scotland, and the inscription, which reads "DAVID DEI GRA REX SCOTORVM." The reverse is identical with the English, except that the cruciform design is disposed diagonally with respect to the edge inscription, possibly to make it simulate the Scottish St. Andrew's cross. Several dies of this piece are known, but it is exceedingly rare and was not issued by later kings.

Passing from the British Isles and the English possessions in France to the Low Countries, we find that imitations of all types of the noble and rose noble were made for two centuries. These range from close copies obviously intended to deceive, to bona fide coinages of large districts and important rulers, fully inscribed to indicate their source.

Our first piece is an imitation, similar to the English nobles of Edward III in all respects except the inscription. The king in the ship carries the shield of England, and it is only by study of the obverse legend that one detects that it is not an English noble. This piece (No. 11) was struck by Walerand, Count of St. Pol and Ligny, 1371-1415, and is inscribed "WALLERD DEI GRA

COM DE LUNE." This coin is the only known example of a copy differing solely in the inscription, although it is not unlikely that it is a surviving representative of a perhaps common type; it would not be surprising to discover similar coins of other minor rulers.

The most important coinage of nobles in the Low Countries is that of the Dukes of Burgundy as Counts of Flanders. There is a nearly complete series from Philip le Hardi, 1389-1404, to Philip the son of Mary of Burgundy and Maximilian, struck probably at Ghent or Bruges in 1488. These pieces, during the reigns of Philip le Hardi, Jean Sans Peur and Philip le Bon (Nos. 12, 13, 14), closely copy the noble type, but the shield carried by the "king" bears the arms of the reigning duke, and the king's crown is replaced by a ducal coronet. The obverse inscription is "PHS DEI GRA DVX BVRG COMES Z DNS FLAND" for the two Philips, JOHS etc. for Jean Sans Peur. On the reverse the letter in the center is the initial of the ruler, P or I, or in some of the later ones a simple rosette. These pieces were of the same weight as the contemporary Henry nobles in England, but of less pure gold, and consequently their importation was legislated against in England.

Of Charles the Bold and his daughter Mary there are no nobles recorded, but Mary's son Philip issued, jointly with his father Maximilian, nobles and half nobles which present an interesting variation of design. The king is shown (No. 15) standing well *behind* the mainmast of the ship so that his figure is now in the left

half of the coin, instead of being the central feature it has heretofore been. On the half nobles (No. 16), of which there are several series with variations in the inscriptions, the reverse has the usual cruciform design, but on the nobles the cross is replaced by a shield with the Burgundian arms. Charles V issued no nobles, and those issued by his son Philip II are of the rose noble type, and fall under the next general division of the subject.

IMITATIONS OF THE ROSE NOBLE

The rose nobles, like their predecessors, the nobles, achieved a wide circulation. Specimens occur with counterstamps of Dutch provinces,⁶ imperial Germany,⁷ Riga (No. 17) and Danzig (No. 18). That close imitations were made is certain. There exist many specimens of broad flan, in low relief, of coarse workmanship, with the exact inscription of the Edward IV rose nobles,⁵ which are commonly called "Flemish." It has been surmised that these were struck by Edward IV during his year of exile in Flanders, between his first and second reigns. Since, however, the coinage of rose nobles had already ceased before his flight and was not resumed in his second reign, this appears improbable. It has also been surmised that these were struck by the Earl of Leicester, who petitioned Elizabeth to be allowed to send gold from the Netherlands to England to be coined—at a profit—into nobles. There is no clear evidence for this supposition; it is not clear why, if he coined

nobles, he should revert to the Edward IV type instead of copying the current Elizabeth ryals. It is more probable that the coins most plausibly described as Leicester nobles are the nobles of the United Provinces, which we shall describe later. We have ample documentary evidence that various mints in the Low Countries struck copies (we would call them "counterfeits") of many coins current in their time, and the item "Rosenobels op naam van Koning Edward van Engeland" occurs frequently in the mint records; it is therefore probable that these "Flemish" nobles belong in this category. Schulman⁸ definitely ascribes these broad flan nobles to the mint at Gorcum.

Taking up now the imitations which were not mere slavish copies, but adaptations with distinctive inscriptions, we find that these are confined entirely to the Low Countries, so that we cannot, as in our treatment of the noble, follow it outward from England through the closely neighboring Anglo-Gallic countries and Scotland. We should, however, note a handsome near-copy, made in Scotland under James VI, the "thistle noble" coined in 1588. This (No. 19) displays a ship on the obverse with the Scotch shield instead of the king's effigy, and with a thistle instead of a rose on the ship's side. The reverse shows a geometric design of lions, crosses and scepters, reminiscent of, but different from the reverse design of noble and rose noble.

We proceed now to the imitations of the rose noble type in the Low Countries. We have already noted that

Charles V coined no nobles. His son Philip II, as ruler of the Netherlands, re-introduced them in 1579, reproducing now the type of the rose noble of Edward IV, but with entirely different inscriptions. These rose nobles were struck for the provinces of Utrecht, Gelderland, Overijssel and Frisia. The Utrecht rose nobles (No. 20) show the effigy of the king in the ship, his shield bearing the arms of Utrecht, the flag a lion rampant. The obverse inscription is "PHS D G HISPANIAE REX DNS TRA." The reverse inscription is "CONCORDIA RES PARVAE CRESCVNT, 1579." The Gelderland rose nobles (No. 21) are closely similar, except that the king's shield bears the double rampant lion of Gelderland. The obverse inscription is "PHS D G HISPZ REX DVX GEL C ZVT." The reverse is the same as the Utrecht pieces.

The Overijssel rose noble is again similar (No. 22), the king's shield bearing rampant lions in two quarters, a horizontal bar in the other quarters; the flag a rampant lion. The reverse inscription is the same, the obverse, "PHS D G HISPANIAR REX AD TRANSISL."

The coinage of this series for Frisia is represented by a unique piece in the Dutch Royal collection (No. 23), illustrated by Schulman in his paper⁹ on the coins of the Ommelanden, 1579-91. It is necessary to have some historical and geographical background to understand the significance of the inscription and other details of this coin. At the period covered by the above dates a portion of Frisia and Groningen, the northern-

most provinces of Holland, formed the "Ommelanden," a district lying between the rivers Eems and Lauwer, and including a group of towns among which were Hunsingo and Fivelgo. On this coin we accordingly find the ship's flag bearing not the rampant lion but the diagonal geometrical pattern which forms the arms of the Ommelanden. The king's shield carries arms which are partly obliterated by wear, but among them those of Hunsingo and Fivelgo are recognizable. The inscription is "PHS D G HISP REX DNS FRI INT AMA Z LAVR" the last four words being abbreviations for INTER AMASUM ET LAUBACUM, a Latinized version of "between the Eems and the Lauwer." The reverse is identical in type and inscription with the Utrecht and Gelderland pieces.

After the first success of the revolt of the Netherlands the rose noble was continued without the name of Philip, but as a coinage of several provinces, and with altered inscriptions. These provincial rose nobles were issued by Zeeland and Frisia, according to Verkade,¹⁰ who records or pictures specimens (Nos. 24 and 25) which are of excessive rarity, and by Gelderland, Utrecht and Campen, the last two issues being comparatively common, indicating a copious coinage. None of these bear dates, but they must belong to the years 1580-81. The Gelderland rose noble (No. 26) is of interest because the figure of the king in the ship, and other details of the type (with the exception of the inscription) are so closely those of the Philip coin (No. 21) described above

as to indicate the same die cutter. The obverse inscription is now "MONETA NOVA AV DVC GELRIA COM Z." The reverse inscription, appropriate to the events of the time, is "DEVS TRANSFERT ET CONSTITVIT REGNA." The rose nobles of Utrecht (No. 27) and of Campen (No. 28) both carry the same reverse inscription as the Philip rose nobles which they superseded, "CONCORDIA RES PARVAE CRESCVNT." The obverse of the Utrecht piece shows the king's shield with the arms of Utrecht, his flag a lion rampant. The inscription is "MONE NOVA ORDINV TRAIECTEN." On the Campen pieces the king's shield bears the arms of the city of Campen, the flag the letter C (which is reversed on some specimens). The inscription is "MON NO AV CIV CAMPEN VALO TRANISVLAN"; or "the new gold coinage of the city of Campen, of the standard of Overijsel."

LATE IMITATIONS OF THE NOBLE

The rose noble was current in Holland until 1585 and was then refunded at ten guilders. Its coinage appears to have ceased about 1582, to be replaced, curiously enough, by a reversion to the type of the original noble, without the rose on the obverse, and with the cruciform design with lions and roses as on the original nobles of Edward III. These nobles were current at seven guilders.

This return to the original noble type appears to have

originated in the city of Ghent, which issued a series of Flemish or Ghent nobles whose standard of value is referred to on certain of the similar nobles of other localities. The Ghent series may therefore be appropriately described first. It consists of three varieties, the first, issued in 1582 (No. 29), shows the king in his ship, with a lion rampant on his shield. The ship flies a square standard on which appear three fleurs-de-lys, and below the standard on the stern of the ship appears a lion rampant. These fleurs-de-lys commemorate the installation of the Duc d'Alençon, brother of the King of France, as ruler of the Netherlands, at the instigation of William the Silent, who believed the country needed a sovereign with the prestige and backing of a great European royal house. The inscription is "MO AVR EA RESTAVR METROPOL GAND FLAND." On the reverse the inscription is "NISI DNS CVSTOD CIVITAT FRVSTRA VIGILATVR 82."

During the year 1582 a state visit of William the Silent to Ghent was planned. For this occasion a new die was cut which differed from the first in substituting for the three fleurs-de-lys in the standard, a pair of clasped hands (No. 30). Unfortunately the Duc d'Alençon proved unacceptable to the Dutch because of his intrigues and treachery and was expelled from the country. The meeting for which these coins were to be struck did not take place, and their coinage was ordered stopped. Only three specimens are known. A new de-

vice had of course to be adopted, and the nobles of 1583 (No. 31) carry a lion rampant on the standard in place of the fleurs-de-lys or clasped hands.

Nobles very similar to these Ghent pieces were struck for Overijssel, Campen, Gelderland, and Zeeland. The Overijssel noble (No. 32) is identical in type with the last Ghent nobles, including the rampant lion on shield and standard, varying only in the inscription. On the obverse this is "MONE NOV AVRE ORDIN TRAN-
SISSVLANAE." The reverse inscription, although different from the Ghent nobles, expresses the same sentiment. The Campen noble, which also was struck of double weight (No. 33), bears on shield and standard a lion rampant accompanied by the city shield. The obverse inscription is "MON AVR CIVI CAMPEN
VALO FLAN," thus indicating adherence to the Flemish or Ghent standard, in contrast to the rose nobles, which, as above noted, were of the standard of Overijssel. The reverse inscription is a variation of the "NISI DOMINVS" inscription of Ghent. The Gelderland noble (No. 34) has the lion rampant on shield and standard, hardly distinguishable from the Ghent pieces. The obverse inscription is "MO AVREA DVC
GELDRIAE COM ZVT FANL." The reverse inscription is again a variant of the Ghent inscription.

The last of this series of late nobles to be described is the issue of Zeeland (No. 35), which has more individuality than the other copies of the Ghent noble. The shield and standard on the obverse show the arms of

Zeeland, a lion rampant rising from the sea. The obverse inscription is "ZELAN DOMINE SALVA NOS PERIMVS." The reverse inscription is "MONETA NOVA AVREA COMIT ZELAND 83." Verkade pictures a specimen with date 84.

NOBLES OF THE UNITED PROVINCES

The last coins struck in the Netherlands bearing the type of the "king in a ship" were nobles of the United Provinces of date 1586 to 1595. These (No. 36) are of a design differing significantly from both the noble and the rose noble. The "king" is now a figure in full armor, with a closed helmet. He carries a sword, but in place of the shield a sheaf of arrows. The standard at the stern of the ship bears a lion rampant. No rose appears on the ship's side, but the rail of the ship bears a series of six shields exhibiting the arms of the six provinces. The reverse shows in the center a sheaf of arrows, and, radiating from this, a stellate design of wavering rays or flames. Pieces were struck in both Holland and Zeeland. The obverse inscription for the Holland issue was "CONCORDIA RES PARVAE CRESCVNT HOL"; for the Zeeland issue ZELA is substituted for HOL. The reverse inscription is "MO ORDIN PROVIN FOEDER BELGIAE," with the date, which is 1586 for the Holland piece pictured by Verkade, and 1595 for his Zeeland specimen.

These pieces, from their date, and from details of the type and inscription, which are similar to the Leicester

dalers, may with some plausibility be considered to be the "Leicester nobles" which have never been positively identified. They are excessively rare; our figure is a reproduction of a woodcut given by Verkade. A search through illustrated sale catalogues of thirty years has shown only one representative of this coinage,¹¹ a half noble of 1587.

CLOSE IMITATIONS OF THE NOBLE, WITH
SMALL VARIATIONS IN THE INSCRIPTIONS

A phenomenon of the coinage of the Low Countries in the sixteenth century was the coinage in various mints of close copies of popular and widely current foreign pieces, with changes, often minute, in the inscriptions. Thus we find the mint at Culemborg¹² listed as making:

Rose nobles
Double and half rose nobles
Double Spanish dukats
Hungarian ducats
Rigksdaalders, etc.

These pieces, on ordinary inspection, look like their originals, but on examining the inscriptions inserted letters are found such as A L or A V, abbreviations for AD LEGEM or AD VALOREM, and other letters which are abbreviations of the town or province by which they were issued. Thus we find double ducats pictured by Verkade with the well-known vis-a-vis portraits of Ferdinand and Isabella, with inscriptions:

DVCATVS R P ZWOL VALOR FERDI-
NAND, for Zwolle

DVCA R P IMP CAMPEN VA FERDINA, for
Campen

DVCAT OR DI WEST FRI VAL FERDIN, for
West Frisia

DVCATVS ORDI TRANSISSV VAL HISP,
for Overijssel

Among such close imitations are found several of the English noble, which are of special interest because from them we get the key to the attribution of the Elizabeth nobles, mentioned earlier as being heretofore unsolved.

Three examples of these imitations of the rose noble, taken from an article by Schulman⁹ on Dutch mints of the sixteenth century, suffice to illustrate these pieces. They are all so close in appearance to the Edward IV rose nobles as to be indistinguishable from them on any but the closest examination. The first (No. 37), of Arkel, bears the inscription "EDWARD D G REG ANG M DNI AR AV E DNS IB" (Edward dei gratia, rex angliae, moneta domini Arkelensis ad valorem Edwardi domini Iberniae).^{12a} It is obvious that on a superficial glance this coin would appear to be of EDWARD —DNS IB, yet it actually says it is of Arkel, of the value of Edward's coins.¹³

The second example (No. 38), of the mint of Culemborg, reads "MO ORD FRISI AD LEGEM EDWARD REG ANG," with the inscription so placed as to appear to begin with EDWARD.

The third example (No. 39), of the same mint with a similar inscription, shows another minor variation—the letter in the ship's flag is an F (Frisia) instead of the E shown by the other pieces.

THE COINAGE OF NOBLES BY MARIE DE BRIMEU,
PRINCESS OF CHIMAY, COUNTESS OF MEGEN, 1572–76

Chimay, a town of Hainault, where Froissart the chronicler is buried, is of interest numismatically for the coins issued by a sixteenth-century ruler, Marie de Brimeu.¹⁴ These coins were struck at the mint of Gorcum, which was notorious for its imitations of current coinages of the principal countries of the time. Among these are imitations of English nobles and rose nobles, of which two have been previously recognized as of Marie de Brimeu.

The first of these is an imitation of the noble of Henry VI, a crude piece (No. 40) which, similar in appearance to the original, bears the obverse inscription "HENRIC DI GRA REX ANGV L MAR B DNS HY," the inserted letters standing for Marie de Brimeu. The fact that thus over a century after the death of Henry VI it was considered profitable to imitate his coinage is striking evidence of the popularity of the original noble.

The second of these (No. 41) is an imitation of the rose noble of Edward IV, differing only in type from the original by the arms on the king's shield being possibly those of Brimeu and Croy (although so similar to the English arms as to be easily mistaken for them), and

by the letter in the king's standard, which is a reversed B instead of an E. The obverse inscription reads, starting at the bottom of the coin, "MARA B PRI D CHI CO D MAE AD LE EDWARD G REG ANG," thus giving in abbreviated form all the Princess' titles and stating the coin is *ad legem*, or according to the standard, of Edward.

We now come to the third example (No. 42), which has not been previously assigned to the Princess of Chimay, but from what has gone before, is obviously one of this series. This is furnished by those *ryals* of Elizabeth with the inserted letters M P R C A L, or M A D G P C A L. These are at once seen to be the same inserted letters as on the previous examples, which are recognized as the initials of Marie, Princess of Chimay; and so this outstanding problem of British numismatics is solved. This attribution is further substantiated by the list (1591) of coins minted at Gorcum, quoted by Schulman,⁸ in which appears "Dubbele en enkele Rozenobels op naam van Koningen Elisabeth en op naam van de prinses Van Chimay."

With this attribution before us the question arises why was it not made long ago. As a matter of fact it was correctly made, nearly two hundred years ago, by Snelling, in his "View of the Gold Coins and Coinage of England," 1763, but he failed to give sufficient information to make a case clear enough for later students to grasp. His attribution is in a footnote (p. 20, note 2), in which he says, "These *ryals* were counterfeited at

Gorcum in Holland, as appears from a placart of the Earl of Leicester: 'Rosatus Nobilis in Gorcum factus est nomine principes a Summeii cujus altera latus rosatu Nobili Anglico convenit altera hunc inscriptionem habet ELISABETH D. G. ANG F. D. G. P. C. A. L. REGINA.'"

What Snelling failed to say, if he knew it, was that "Summeii" was Chimay, which gives the C in the inscription, or that the name of the Princess was Marie, which gives the M or MA of some forms of the inscription. Without this information his statement was a mere assertion, correct, but unsupported by the necessary data for proof.

CONCLUSION

This survey of the English noble and its imitations does not pretend to be a complete corpus. For this it would be necessary to consult certain collections, such as those of the museums in Holland, which are at present inaccessible. Enough is here presented however to give an idea of the place of the noble in the coinage of its time, the extent of its circulation, its popularity, and the manner in which it, like other coinages of wide reception, was made the subject of imitations of varying degrees of fidelity.

LIST OF NOBLES AND IMITATIONS ILLUSTRATIVE OF THE TEXT

1. *Noble of Edward III, treaty period, 1361–69.

EDWARD: DEI: GRA: REX: ANGL: DNS:
HYB: Z: AQT. King crowned, standing in ship, holding sword and shield.

Rev. IHS: AVTEM: TRANSIENS: PER:
MEDIV: ILLORVM: IBAT: Floriated cross with lys at end of each limb, and E within an ornamented compartment in the center. In each angle of cross a lion passant, guardant, with crown above.

Author's Collection

2. *Noble of Richard II, 1377–99, struck at Calais.

RICARD: D: G: REX: ANGL: Z: FRANC:
D: HIB: Z: AQ: Similar to No. 1, except flag at stern of ship.

Rev. Similar to No. 1, except for R in center.

Author's Collection

3. *Noble of Henry VI, 1422–61.

HENRIC: DI: GRA: REX: ANGL: Z:
FRANC DNS: HYB: Similar to No. 1, except number of fleurs-de-lys in French arms of shield only three.

Rev. Similar to No. 1, except H in center.

Author's Collection

***4.** *Rose Noble or Ryal of Edward IV, 1461-83.*

EDWARD: DI: GRA: REX: ANGL: Z:
FRANC: DNS: IB: King crowned, standing, facing
 in ship, holding sword and shield; full blown rose on
 side of ship; at stern, flag with letter E.

Rev. **IHS: AVT: TRANSIENS: PER:**
MEDIVM: ILLORVM: IBAT: Within arched tres-
 sure and trefoil in each spandrel, floriated cross with rose
 in center and lion surmounted by crown in each angle.

Author's Collection

***5.** *Ryal of Henry VII, 1485-1509.*

HENRIC: DI: GRA: REX: ANGL: Z:
FRANC: DNS: IBAR: King standing facing in ship
 and holding sword and shield; flag with **h** at prow and
 another with dragon at stern.

Rev. **IHS: AVTEM: TRANSIENS: PER:**
MEDIV: ILLORV: IBAT: Small shield with arms of
 France on double rose.

British Museum (Grueber 373)

***6.** *Ryal of Mary, 1553-58.*

MARIA: I: D: G: ANG: FRA: Z: HIB:
REGINA: M.D.LIII: Queen crowned, standing fac-
 ing, holding sword and shield; full blown rose on side of
 ship; at stern, flag with letter M.

Rev. **A: DNO: FACT V'EST: ISTVD: Z:**
EST: MIRABI': IN: OCVL. NR IS. Similar to No. 4.

Author's Collection

7. *Ryal of Elizabeth, 1558–1603.

ELIZAB: D: G: ANG: FR: ET: HIB: REGINA: The queen nearly facing, standing in ship and holding scepter and orb; ship with high quarter-deck, rose on its side; at prow, flag with E.

Rev. Type and inscription as No. 4.

Author's Collection

8. *Ryal of James I, 1603–25.

IACOBVS: D: G: MAG: BRIT: FRAN: ET: HIB: REX: King standing in two-masted ship, crowned and holding sword and shield; flag with I at prow, rose on side.

Rev. As No. 6.

Mint-mark on obv. and rev.: a castle.

Author's Collection

9. *Noble of Edward the Black Prince, 1330–76.*

EDWARD: PO: GNS: REG: ANGL: DNS: AQUITANIE: King crowned, standing in ship, holding sword and shield.

Rev. **IHC: AVTEM: TRANSIENS: PER: MEDIV: ILLORVM: IBAT:** Floriated cross with lys at end of each limb, and E within an ornamented compartment in the center. In each angle of cross a lion passant, guardant, with crown above.

Motte Collection, No. 283 (H. Rolland, 1922)

10. *Noble of David II of Scotland, 1329–71.

DAVID: DEI: GRA: REX: SCOTORUM:

The King crowned, standing facing in a ship, holding sword and shield with arms of Scotland.

Rev. IHS: AVTEM: TRANSIENS: P: MEDIVM: ILLORVM: IBAT: Identical with No. 1, except rosette in center, and floriated cross is placed diagonally with respect to beginning of legend (St. Andrew's cross).

British Museum (Grueber 24)

11. *Noble of Walerand, Count of St. Pol and Ligny, 1371-1415.*

WALLERD: DEI: GRA: COM: DE: LUNE: PO: CO: Identical type to that of Edward III (No. 1).

Rev. As No. 1, except rosette in center.

Beistegui Coll. (Babelon), Pl. XXXVI, No. 661

***12.** *Noble of Philip le Hardi, Duke of Burgundy, 1384-1404.*

PHS: DEI: GRA: DVX: BURG: COMES: Z: DNS: FLAND: Standing figure of duke in ship, wearing coronet, and carrying sword and shield with arms of Duchy of Burgundy.

Rev. As No. 1, except P in center of cross.

Author's Collection

***13.** *Noble of Jean Sans Peur, Duke of Burgundy, 1404-37.*

IOHS: DEI: GRA: DVX: BVRG: COMES: Z:

DNS: FLAND: As No. 12, except arms on shield have added escutcheon.

Rev. As No. 12, except I in center of cross.

Bourgey Sale (Babit Coll.), March 28, 1927, No. 1383

***14.** *Noble of Philip le Bon, Duke of Burgundy, 1437-60.*

PHS: DEI: GRA: DVX: BURG: COMES: Z:

DNS: FLAND: As No. 12, except arms on shield have added escutcheon.

Rev. As Nos. 12 and 13, except rosette in center of cross.

Author's Collection

***15.** *Noble of Maximilian and Philip of Burgundy, 1482-94.*

M: D: G: RO: REX: ET: PHS: ARCHIDVCES: AV: B: CO: HO: King in three-masted ship, standing behind mainmast and sail, carrying sword and orb.

Rev. **MO: AVREA: RO: REGIS: ET: PHI: ARCHID: AV. BO: CO: HOR:** Shield in middle of floriated cross with crowns and eagles in compartments.

Schulman Sale, Jan. 1931, No. 1733

***16.** *Half Noble of Maximilian and Philip of Burgundy, 1488.*

MO: RO: RE: Z: PHI: ARDVC: AVS: BO:

BR: CO: HO: King standing facing in three-masted ship, behind mainmast, carrying sword, orb, and shield with Burgundian arms.

Rev. **REFORMACIO: GVERRE: PAX: EST: A' 1488.** Floriated cross, crowns in compartments rosette in center.

Author's Collection

***17.** *Rose Noble of Edward IV, 1461-83, with Counterstamp of Riga.*

EDWARD: DI: GRA: REX: ANGL: Z: FRANC: DNS: IB: Similar to No. 4, except for counterstamp of crossed keys in right field above ship.

Rev. As No. 4.

Author's Collection

***18.** *Rose Noble of Edward IV, 1461-83, with Counterstamp of Danzig.*

EDWARD: DI: GRA: REX: ANGL: Z: FRANC: DNS: IB: Similar to No. 4, except for counterstamp of crown over double cross in waves below ship.

Rev. As No. 4.

Author's Collection

***19.** *Scottish Thistle Noble of James VI, 1567-1603.*

IACOBUS: 6: DEI: GRATIA: REX: SCOT- TORUM: Single-masted ship carrying crowned Scot-

tish shield in waist; standards fore and aft, the left inscribed I, the right 6; thistle on side of ship.

Rev. FLORENT: SCEPT: PIIS: REGNA: HIS: IOVA: DAT: NVMERAT: Q: Within an ornamented quarterfoil two scepters in saltire, with crown at each end; thistle in center; outside the quarterfoil, thistle-head in each spandrel, and inside in each arch, crowned lion.

Author's Collection

20. *Rose Noble of Philip II for Utrecht, 1575.*

PHS: D: G: HISPANIAE: REX: DNS: TRA: King in ship, bearing sword and shield with arms of Utrecht; rose with sun rays superposed on side of ship; square standard at stern of ship bearing rampant lion.

Rev. CONCORDIA: RES: PARVAE: CRES-CVNT: 1579: Similar to Edward IV rose noble, No. 4, except that lions under crown are rampant instead of passant.

Schulman Sale, May 22, 1911, No. 78

*21. *Rose Noble of Philip II for Gelderland, 1579.*

PHS: D: G: HISPZ: REX: DVX: GEL: C: ZVT. King standing facing in ship bearing sword and shield with arms of Gelderland: square standard at stern of ship with broad border around lion rampant; rose on side of ship.

Rev. Similar to No. 20.

Muller Sale, December 12, 1904, Pl. IX, No. 3959

22. *Rose Noble of Philip II for Overijsel.*

PHS: D: G: HISPANIAR: REX: AD:
TRANSISL: King standing facing in ship bearing
sword and shield with arms of Overijsel; on flag ramp-
ant lion.

Rev. Same as Nos. 19 and 20.

Verkade, Pl. 133, Fig. 1; Snelling, Pl. 7, No. 8

23. *Rose Noble of Philip II for the Ommelanden.*

PHS: D: G: HISP: REX: DNS: FRI: INT:
AMA: Z: LAVR. King standing facing carrying shield
bearing arms of Hunsingo and Fivelgo. Flag with arms
of Ommelanden.

Rev. Same as Nos. 19–21.

Schulman, "De Munten der Ommelanden," Fig. 1

24. *Rose Noble of Zeeland.*

MON: NOV: AVR: COMITAT: ZELAN:
King standing facing in ship bearing sword and shield
with arms of Zeeland. Flag at stern with arms of Zee-
land.

Rev. SI: DEVS: NOBISCVM: QVIS: CON-
TRA: NOS: As Edward IV rose noble, No. 4.

Verkade, Pl. 77, Fig. 1

25. *Rose Noble of Frisia.*

MO: NOVA: AVRE: ORDINVM: FRISI:
Helmeted figure of king in ship, bearing sword and
shield with arms of Frisia.

Rev. NISI: TV: DOMINE: NOBISCVM:
FRVSTRA: As No. 23.

Verkade, Pl. 117, Fig. 3

26. *Rose Noble of Gelderland.

MONETA: NOVA: AV: DVC: GELRIE:
COM: Z: Same type and style as No. 20.

Rev. DEVS: TRANSFERT: ET: CONSTI-
TVIT: REGNA: Similar to Nos. 21 and 22.

Author's Collection

27. *Rose Noble of Utrecht.

MONE: NOVA: ORDINV: TRAIECTEN:
Similar to No. 21, except rose on ship has checkered
center instead of superposed sun's rays.

Rev. CONCORDIA: RES: PARVAE: CRES-
CVNT: Rose and sun, lions and crowns closely similar
to Edward IV rose noble, No. 4.

Author's Collection

28. *Rose Noble of Campen.

MON: NO: AV: CIVI: CAMPEN: VALO:
TRAN: ISVLAN: Similar to No. 27, except king's
shield bears arms of Campen; ship's standard inscribed C.

Rev. Type and inscription similar to Utrecht
rose noble, No. 27.

Author's Collection

29. *Noble of Ghent, 1582, first type.

MO: AVREA: RESTAVR: METROPOL:

GAND: FLAND: Letters N T in field to left and right of king's head. King standing facing in center of ship, bearing sword and shield with rampant lion to l.; square standard at stern of ship, bearing three fleurs-de-lys; below, lion rampant.

Rev. **NISI: DNS: CVSTOD: CIVITAT: FRVSTRA: VIGILATVR: 82:** Floriated cross with lions and crown, similar to Edward III noble, No. 1, but with rosette at center.

Author's Collection

***30.** *Noble of Ghent, 1582, second type.*

As No. 29, except ship's standard carries two clasped hands.

Author's Collection

***31.** *Noble of Ghent, 1583, third type.*

As Nos. 29 and 30, except ship's standard now carries rampant lion, which has been moved up from space between standard and ship's stern.

Reverse inscription now ends with date 83.

Author's Collection

***32.** *Noble of Overijssel, 1583.*

MONE: NOV: AVRE: ORDIN: TRANSIS-SVLANLAE: Same as No. 31.

Rev. **NISI: TV: DOMINE: NOS: SERVA-VERIS: FRVSTRA: 83:** Same as Nos. 29, 30, 31.

Author's Collection

33.** *Double Noble of Campen.MON: AVR: CIVI: CAMPEN: VALO: FLAN:**

King standing facing in ship, bearing sword and shield. Shield bears rampant lion with shield on which is triple-towered gate. Ship's standard bears same device as king's shield.

Rev. **NISI: DOMINVS: SERVAVERIT: CIVITATEM: FRVSTEM:** Same as No. 28.

*Author's Collection****34.** *Noble of Gelderland.***MO: AUREA: DVC: GELDRIAE: COM: Z**

VT FANL: Closely similar to No. 30, except double border to ship's standard, and omission of letters N T in field.

Rev. **NISI: QVIA: DNS: ERAT: IN: NOBIS: FORTE: DEGLVTISS:** As No. 1, except rosette in center of cross.

*Author's Collection****35.** *Noble of Zeeland, 1583.***ZELAN: DOMINE: SALVA: NOS: PERI-**

MVS: King standing facing in ship, with sword and shield; square standard at stern of ship. King's shield and standard bear rampant lion emerging from waves.

Rev. **MONETA: NOVA: AVREA: COMIT: ZELAND: 83:** As No. 28.

Schulman Sale, June 8, 1937, Pl. XII, No. 384

36.** *Noble of United Provinces, 1586.CONCORDIA: RES: PARVAE: CRESCVNT:****HOL:** Helmeted figure with sword standing facing in ship. Ship carries arms of six provinces along rail; square standard at stern with rampant lion.*Rev.* **MO: ORDIN: PROVIN: FOEDER:****BELGIAE: 1586:** Sun's rays or flames radiating from center disc, on which sheaf of arrows.*Verkade, Pl. 39, Fig. 1***37.** *Rose Noble of Arkel.***BD: WARD: D: G: RBG: ANG: M: DNI:****AR: A.V.B.: DNS: IB:**^{12a} King standing facing in ship, similar in appearance to Edward IV rose nobles (No. 4). The king's shield displays in two quarters three fleurs-de-lys similar to the French arms borne by Edward; in the other two quarters a double row of lozenges, these constituting the arms of Arkel.*Rev.* Exact copy of Edward IV rose noble (No. 4).*Schulman, De Munten der Ommelanden, p. 26.
Dutch Royal Cabinet***38.** *Rose Noble of Frisia.***MO: ORD: FRISI: AD: LEGEM: EDWARD:****REG: ANG:** Type identical with Edward IV rose nobles, with English arms on shield.*Rev.* Exact copy of Edward IV rose noble.*Schulman, De Munten der Ommelanden, p. 36.
Dutch Royal Cabinet*

39. *Rose Noble of Frisia.*

MO: ORD: FRISIAE: AD: LEGEM: EDWARD: FRAN: Type identical with Edward IV rose noble, except that ship's flag carries the letter F.

Rev. Exact copy of Edward IV rose noble.

*Schulman, De Munten der Ommelanden, p. 36.
Dutch Royal Cabinet*

40. *Noble of Marie of Brimeu, Princess of Chimay, 1572-76, in imitation of Henry VI of England.*

HENRIC: DI: GRA: REX: ANGVL: MAR: B: DNS: HY: King standing facing in ship with sword and shield bearing arms of England.

Rev. Inscription blundered and meaningless. Floriated cross with lions and crown in compartments. H in center.

Schulman Sale, October 4, 1911, Pl. V, No. 868

41. *Rose Noble of Marie of Brimeu, 1572-76, in imitation of Edward IV of England.*

EDWARD: G: REG: ANG: MAR: A: B: PRI: D: CHI: COD: MAE: ADLE: King standing facing in ship, bearing sword and shield consisting of fleurs-de-llys in two quarters, horizontal bars in others (arms of Brimeu and Croy); rose on side of ship: ship's standard carries inverted B.

Rev. As No. 4.

Cuypers, Rev. Num. Belge, 1851, p. 184

- *42. *Rose Noble of Marie of Brimeu, 1572–76,
in imitation of Elizabeth of England.*

ELIZABET: ANGL: MA: D: G: P: C: A: L:
REGINAE: Similar to ryal of Elizabeth, No. 7, except
that letter on ship's standard can be read as B.

Rev. As No. 7.

Drabble Sale, July 1939, Pl. VI, No. 150

NOTES

¹ For references see the bibliography quoted in Brooke's "English Coins."

² Vol. II, 3rd ed., 1840, p. 356, footnote to description of Plate X, 4.

³ An early discussion of this subject, "A View of Nobles Struck Abroad, in Imitation of English," is included in Snelling, "On the Coins of Great Britain, France and Ireland," Part V, 1769, p. 53 and Plate 7.

⁴ Schulman Sale Catalogue, May 22, 1911, Plate II, Fig. 78.

⁵ *Numismatic Chronicle*, 3rd Series, Vol. XIII, p. 26.

⁶ Schulman Sale Catalogue, January, 1931, No. 1924.

⁷ Mentioned by Hazlitt, "Coinage of the European Continent," Supplement, p. 108.

⁸ "De Muntstempels der Munt te Gorinchem," *Jaarboek voor Munt-en Penningkunde*, Vol. IV, 1917, pp. 41-73.

⁹ "De Munten der Ommelanden, 1579-1591," *Jaarboek voor Munt-en Penningkunde*, Vol. II, 1915, pp. 129-181.

¹⁰ P. Verkade, "Muntboek," Scheedam, 1848. The illustrations, which are woodcuts, are often reproductions of old "placarts."

¹¹ F. Muller Catalogue, Dec. 1904, Plate V, No. 1037.

¹² Quoted by Schulman, "De Munten der Ommelanden," cf. note 8, above.

^{12a} This piece, illustrated by Schulman, "De Munten der Ommelanden," has in its obverse inscription three occurrences of the use of a B for E.

¹³ Schulman, *Jaarboek voor Munt-en Penningkunde*, Vol. XVII, 1930, p. 81, describes one of these Arkel imitations with the counterstamp of Riga, showing that they circulated along with the original English pieces.

¹⁴ Cuypers, "Notice Sur Les Monnaies des Comtes de Megen," *Rev. de la Numismatique Belge*, 2nd series, Vol. I, p. 162. See also Van der Chijs, "Die Munten der Nederlanden," Vol. VIII, Pl. III, Nos. 22 and 23.

PLATES

IMITATIONS OF THE ENGLISH NOBLE



1



2



3



PLATE I



4



5



6



PLATE II



12



13



14



IMITATIONS OF THE ENGLISH NOBLE



15



16



17

PLATE III



18



19



21



PLATES

IMITATIONS OF THE ENGLISH NOBLE



1



2



3



PLATE I



4



5



6



IMITATIONS OF THE ENGLISH NOBLE



7



8



10

PLATE II



12



13



14



IMITATIONS OF THE ENGLISH NOBLE



15



16



17

PLATE III



18



19



21



IMITATIONS OF THE ENGLISH NOBLE



15



16



17

PLATE III



18



19



21



IMITATIONS OF THE ENGLISH NOBLE



26



27



28



PLATE IV



29



30



31



IMITATIONS OF THE ENGLISH NOBLE



32



33



34

PLATE V



35



36



42



CO
35
N9

NOV 10 1941

NUMISMATIC NOTES
AND MONOGRAPHS

No. 94



GOLD AND SILVER COIN STAND-
ARDS IN THE ROMAN EMPIRE

BY

LOUIS C. WEST

THE AMERICAN NUMISMATIC SOCIETY
BROADWAY AT 156TH STREET
NEW YORK
1941

PUBLICATIONS

The American Journal of Numismatics, 1866-1920.

Monthly, May, 1866-April, 1870.

Quarterly, July, 1870-October, 1912.

Annually, 1913-1920.

With many plates, illustrations, maps and tables. Less than a half-dozen complete sets of the Journal remain on hand. Price on application.

The numbers necessary to complete broken sets may in most cases be obtained. An index to the first fifty volumes has been issued as part of Volume LI. It may be purchased separately for \$3.00.

The American Numismatic Society. Catalogue of the International Exhibition of Contemporary Medals. March, 1910. New and revised edition. New York. 1911 xxxvi, 412 pages, 512 illustrations. \$3.00.

Numismatic Notes and Monographs

9. David Eugene Smith, LL.D. Computing Jetons. 1921. 70 pp. 25 pls. \$1.50.
10. Edward T. Newell. The First Seleucid Coinage at Tyre. 1921. 40 pp. 8 pls. \$1.00.
12. Howland Wood. Gold Dollars of 1858. 1922. 7 pp. 2 pls. 50c.
13. R. B. Whitehead. Pre-Mohammedan Coinage of N. W. India. 1922. 56 pp. 15 pls. \$2.00.
14. George F. Hill. Attambelos I of Characene. 1922. 12 pp. 3 pls. \$1.00.
15. M. P. Vlasto. Taras Oikistes (A Contribution to Tarentine Numismatics). 1922. 234 pp. 13 pls. \$3.50.
17. Agnes Baldwin. Six Roman Bronze Medallions. 1923. 39 pp. 6 pls. \$1.50.
18. Howland Wood. Tegucigalpa Coinage of 1823. 1923. 16 pp. 2 pls. 50c.
19. Edward T. Newell. Alexander Hoards—II. Demanhur Hoard. 1923. 162 pp. 8 pls. \$2.50.
20. Harold E. Gillingham. Italian Orders of Chivalry and Medals of Honour. 146 pp. 34 pls. \$2.00.
21. Edward T. Newell. Alexander Hoards—III. Andritsaena. 1924. 39 pp. 6 pls. \$1.00.
22. C. T. Seltman. A Hoard from Side. 1924. 20 pp. 3 pls. \$1.00.
23. R. B. Seager. A Cretan Coin Hoard. 1924. 55 pp. 12 pls. \$2.00.
24. Samuel R. Milbank. The Coinage of Aegina. 1925. 66 pp. 5 pls. \$2.00.
26. Edward T. Newell. Mithradates of Parthia and Hyspaosines of Characene. 1925. 18 pp. 2 pls. 50c.
27. Sydney P. Noe. The Mende (Kaliandra) Hoard. 1926. 73 pp. 10 pls. \$2.00.

N U M I S M A T I C
NOTES AND MONOGRAPHS

NUMBER 94

NUMISMATIC NOTES AND MONOGRAPHS
is devoted to essays and treatises on subjects relating to coins, paper money, medals and decorations and is uniform with Hispanic Notes and Monographs published by the Hispanic Society of America, and with Indian Notes and Monographs issued by the Museum of the American Indian—Heye Foundation.

PUBLICATION COMMITTEE

AGNES BALDWIN BRETT, *Chairman*

STEPHEN H. P. PELL

THOMAS O. MABBOTT

EDITORIAL STAFF

SYDNEY PHILIP NOE, *Editor*

SAWYER MCA. MOSSER *Associate Editor*

GOLD AND SILVER COIN STANDARDS IN THE ROMAN EMPIRE

BY
LOUIS C. WEST



THE AMERICAN NUMISMATIC SOCIETY
BROADWAY AT 156TH STREET
NEW YORK
1941

COPYRIGHT 1941 BY
THE AMERICAN NUMISMATIC SOCIETY

THE INTELLIGENCER PRINTING CO.
LANCASTER, PA.

GOLD AND SILVER COIN STANDARDS IN THE ROMAN EMPIRE

BY LOUIS C. WEST

INTRODUCTION

The three centuries from Augustus to Diocletian witnessed great changes in the political, social, and economic life of the Roman Empire. At the same time, important changes were taking place in the imperial coinage. It must not be forgotten, much as we may criticize the financial policy of the Empire during these three centuries, that the government did succeed in maintaining its gold coinage as a medium of exchange throughout the entire period. For over two-thirds of this period it also maintained a silver currency in which its subjects had confidence. At no time in its history, unless perhaps at the middle of the third century, did the Roman government subject its gold coinage to as sudden and drastic a reduction as that which occurred in this country in 1933. And when we look askance at the depreciated denarius of a Septimius or a Caracalla we should not forget that 60% of the value of our silver dollar is confidence rather than worth.¹ These facts do not mean, unfortunately, that the history of the gold and silver coinage of the Roman Empire or of its monetary policy is easy to

¹ As bullion it has a market value of about 40 cents. (February, 1941.)

2 GOLD AND SILVER STANDARDS

understand. The importance of study of the imperial coinage was emphasized by George Finlay nearly a century ago: "In reviewing the various causes which contributed to the decline of the wealth and to the diminution of the population of the Roman Empire, it is necessary to take into account the depreciation of the coinage, which frequently robbed large classes of the industrious citizens of a great part of their wealth, reduced the amount of property in the empire, produced confusion in legal contracts and anarchy in prices. . . . The evils which must have resulted from the enormous depreciation of the Roman coinage at several periods can only be clearly understood by a chronological record of the principal changes—by remembering that each issue of a depreciated currency was an act of bankruptcy on the part of the reigning emperor. . . ."

To make the problem more difficult, the literary and epigraphical evidence is rare and sometimes unreliable. Often the interpretation of the evidence is a matter for lengthy disputes. It hardly needs to be said that there is no ancient account either of the money or of monetary policy. All our evidence, aside from the coins themselves, is composed of more or less casual statements found in documents, both on stone and papyri, or in the literature that has been preserved.

As evidence from other sources is so often contradictory and confusing, the purpose of this paper is to determine the official ratio of gold and silver from an examination of the weights of all imperial

gold and silver coins.² It is fortunate that so many Roman coins are still extant. In addition to almost countless thousands of varieties of subsidiary coins, there has survived a surprising number of gold coins. The tables which form part of this work list approximately nine thousand whose weights are available, and there are many more about which that information is lacking.³

² A study of this material by the present author appeared in the *American Journal of Philology*, Vol. LXII, pp. 289–301. For the sake of comparison, some of the various ratios determined by different scholars for the imperial period are cited:

- 1 : 13,—Mattingly, *Roman Coins*, 128. Based on the Neronian reform (A.D. 63/64) of the silver and allowing for the debasement of the denarius.
- 1 : 7.3,—Heichelheim, *Klio*, XXV (1932), 124. Based on the Jewish poll tax in A.D. 72/73 (Wilcken, *Grundzüge*, II. 61).
- 1 : 10,—Mickwitz, *Geld und Wirtschaft*, 56. Based on Trajan's reform (A.D. 99/100).
- 1 : 8.2,—Kubitschek, *Quinquennium*, 103. Based on Lucian, *Pseudologistes* 30 (Antoninus Pius?).
- 1 : 5.86,—Kubitschek, *Quinquennium*, 105. Based on CIG. 5008, 5010 (A.D. 241/4).
- 1 : 7.82; 1 : 9.76; 1 : 6.50,—Giesecke, *Geldwesen*, 222. For the three periods into which he divides the coinage of Aurelian (A.D. 270–275).
- 1 : 8 or 1 : 9,—Heichelheim in comment on *P. Giess. Univ. Bibl.* 22 and in *Klio*, XXV (1932), 124 (A.D. 284–305).
- 1 : 7.8,—Giesecke, *Geldwesen*, 222. Based on Diocletian's reform (A.D. 294).
- 1 : 20.8,—Mickwitz, *Geld und Wirtschaft*, 69. Based on Diocletian's edict (A.D. 301).
- 1 : 13½,—Heichelheim, *Klio*, XXIX (1936), 131. Based on P. O. 1653 (A.D. 306).

³ Information about weights has been gathered from museum catalogues, auction catalogues, articles in various numismatic and archaeological journals, publications of specific hoards, and from the unpublished collections of the Metropolitan Museum of Art, the American Numismatic Society, Princeton University, and the private collection of the late Mr. E. T. Newell. It is unfortunate

4 GOLD AND SILVER STANDARDS

The question whether the gold coinage was sufficient to serve its purpose as a medium of exchange is now impossible of definite answer. It is sometimes said that gold coins were of little monetary importance during the third century. Mickwitz⁴ disagrees with this, but believes that earlier coins were generally used in this period and that new coins were struck only in comparatively limited numbers. This hardly seems a fair inference from the numbers now extant. Of more importance than the quantity of gold in circulation is the velocity of its circulation, but on this subject nothing, unfortunately, is known.

Until the time of Elagabalus the metrology of gold coins may perhaps best be studied by means of frequency tables. By grouping coins according to their weights, the intent of the mint officials may be discovered as well as changes in standard.^{4a} These successive changes may be briefly summarized. Augustus first struck the aureus at the rate of forty, then possibly of forty-one⁵ and, at the close of his reign, of forty-two to the pound. The next great change occurred in A.D. 63 or 64, when Nero reduced the standard to forty-five to the pound.⁶ Here it stayed, with a few exceptions, until the time of

that such works as those by Strack give no weights. Blanchet enumerates about 12,000 gold coins in his work on Gallic and German hoards and mentions other hoards where no numbers are given. Of only a small part of these can weights ever be had.

⁴ *Geld und Wirtschaft*, 65.

^{4a} See Hill, *Num. Chron.*, 1924, 76ff., for a concise account of this method.

⁵ See Ondrouch, *Der röm. Denarfund von Vyskovce*, 9.

⁶ See for both Augustus and Nero, Pliny, *H. N.* XXXIII. 3, 13.

Macrinus in A.D. 218. These exceptions are as follows: the Spanish mint of Galba apparently did not accept the new standard of Nero, although Galba's mint at Rome issued the lighter coins. Early in his reign Domitian definitely abandoned the Neronian standard. His heavier weights were maintained, with indifferent success to be sure, until Trajan's second year. Both Didius Julianus and Caracalla made efforts to reduce the standard to fifty to the pound,—a change apparently followed by the mint at Rome operated by Elagabalus, but not adopted by the Antioch mint of the same ruler.⁷

For about half of the third century, statements as to the standards adopted by the various rulers are little more than guesses.⁸ Under Gordian III the standard seems to have been reduced to seventy to the pound; under Trebonianus Gallus to eighty to the pound; under Valerian and Gallienus there seems to have been a further decline and then apparently an increase in weight which under Claudius II seems to represent sixty to the pound. Aurelian made an effort to improve weights, as did Probus, who seemingly attempted a standard of fifty to the pound. This attempt was unsuccessful, for the coinage of Carus falls to a standard of seventy to the pound. Diocletian's earlier coins were on this same basis, his later coins on the basis of sixty to the pound. The change to a heavier standard was too optimistic, for when Constantine finally stabilized the currency he replaced the

⁷ See Table B.

⁸ See Table B.

6 GOLD AND SILVER STANDARDS

aureus with the solidus, which was struck at the rate of seventy-two to the pound.

While the aureus was the head of the monetary system, the denarius, which was the chief silver coin, was of far greater practical importance. Tariffed at twenty-five to the aureus, it represented in the first century at least, a good day's wage; in fact it was more than the basic army pay fixed by Augustus and Tiberius, a wage that had no allowance for food or clothing.⁹

In discussing the denarius, there is not only the matter of weight to be considered, but there is the progressive lowering of the percentage of silver in the coin also.¹⁰ The practical importance of this progressive debasement of the denarius depends upon whether or not the Roman government considered it more or less a token coin, and was both willing and able to exchange it at a fixed rate for the aureus. Ordinary commercial convenience demanded that there be a fixed ratio between the two coins. The moment the general public had reason to believe that this fixed ratio was to be abandoned, there would have been financial chaos.

The Roman pound contained twelve ounces, each of which contained twenty-four scruples or grammata. The theoretical (not the actual) weights for coins struck at the respective numbers to the pound of metal are as follows:

⁹ Tacitus, *Ann.* I. 17.6: 26.

¹⁰ See chiefly Hammer, *Die Feingehalt der griechischen und römischen Münzen* (Zeit. für Num. 1908), 97 ff. Other analyses are given by Mickwitz, *Geld und Wirtschaft*, 40; Ondrouch, *loc. cit.*; Mattingly, *BMC passim.*; all later statements here as to fineness of coins are based primarily on Hammer.

Pieces to pound	Weight in grains	Weight in metric grams	Weight in Roman scruples
40	126.4	8.186	7.2
41	123.3	7.987	7.0
42	120.4	7.796	6.857
45	112.4	7.277	6.4
50	101.2	6.549	5.76
60	84.3	5.457	4.8
70	72.2	4.678	4.114
72	70.2	4.55	4.0
80	63.2	4.093	3.60
90	56.2	3.638	3.20

Table A summarizes the facts that indicate the ratios between gold and silver under the various rulers from Augustus to Diocletian.

Pliny's statement that under Augustus the ratio of gold to silver was 1 : 12½ may be compared with the figure of 1 : 11.97 found from the coins.¹¹ Similarly, the theoretical ratio of 1 : 11.72 for Nero's reformed coinage may be compared with the figure of 1 : 11.26 found from the coins. Nero's change represented an increase of about 6% in the relative value of silver.

The deviation of the ratios based on the weights of the coins from the ratios found from the figures given by Pliny is approximately the same both for Augustus and Nero. Later ratios found up to the time of Marcus Aurelius indicate that 1 : 11.72 continued to be the theoretical ratio. It is noteworthy that Domitian's currency reform meant no appreciable difference in the relative value of gold and silver. Some change, however, seems to have taken place in the reign of Commodus. His aurei seem slightly

¹¹ Pliny, *N. H.* XXXIII, 3.13.

8 GOLD AND SILVER STANDARDS

TABLE A—Part 1

THE RATIO OF GOLD TO SILVER FROM THE COIN WEIGHTS¹²

		Based On	
		25 denarii to aureus	15 antoniniani to aureus
Augustus	43/30	1 : 11.69	
	III viri	1 : 12.20	
	others to 11 A. D.	1 : 11.97	
Tiberius		1 : 11.82	
Caligula		1 : 11.94	
Claudius		1 : 12.33	
Nero	54/63	1 : 11.66	
	64/68	1 : 11.26	
Galba	Rome	1 : 11.26	
	Spain	1 : 10.98	
Otho		1 : 11.71	
Vitellius		1 : 11.44	
Vespasian		1 : 10.71	
Titus		1 : 11.19	
Domitian	81/82	1 : 10.94	
	82/96	1 : 11.0	
Nerva		1 : 10.81	
Trajan	98/99	1 : 10.97	
	100/17	1 : 11.04	
Hadrian		1 : 11.26	
Pius		1 : 11.49	
Marcus		1 : 11.49	
Commodus		1 : 10.02	
Pertinax		1 : 10.84	
Didius		1 : 10.72	
Septimius		1 : 10.90	
Caracalla	211/15	1 : 11.03	
	215/17	1 : 12.22	1 : 11.59
Macrinus		1 : 11.07	1 : 10.71
Elagabalus	Rome	1 : 12.03	1 : 12.04
	Antioch	1 : 9.4	

¹² The method of figuring the ratio of gold to silver may be illustrated by the coins of Tiberius. His denarius weighed 56.29 grains (Table D). Multiply by 25 (the number of denarii to an aureus), then divide by 119 (the weight of the aureus given in Table B). The result, 11.82, appears in Table A as the ratio.

IN THE ROMAN EMPIRE

9

TABLE A—Part 2
 RATIO OF GOLD TO SILVER USING ACTUAL WEIGHTS OF SILVER AND ESTIMATED WEIGHT OF GOLD COINS¹³

	Number of aurei to pound	Assuming 25 denarii to the aureus	Assuming 15 antoniniani to the aureus	No. of antoniniani in contemporary aureus	No. of antonini- ani in a pound of gold (Assuming ratio of 1 : 14)
Alexander Severus	50	1 : 11.9			
Maximinus	50	1 : 12.10			
Pupienus, etc.	50		1 : 11.76		
Gordian III	60		1 : 12.15		
Philip	70		1 : 13.4		
Decius	70		1 : 13.0		
Trebonianus, etc.	80		1 : 13.0		
Aemilianus	80		1 : 12.8		
Valerian and Gallienus	70				
	80				
	90		1 : 13.9	210	18900
Claudius	60			540	32400
Aurelian, prereform	60			540	32400
reform	50			600	30000
Tacitus	70			300	21000
Probus	60			510	30600
Carus	70			420	29400
Carinus	60			390	23400
Diocletian	70				
	60	1 : 14.4			(25000) ¹⁴

¹³ The procedure here is the same as before except that no definite point of concentration can be found for these gold coins and that weights based on the number to the pound are used.

¹⁴ This assumes that an antoninianus was worth two denarii at this time (*Edict Dioclet.* XXX. 1). This also disregards the difficulty presented by the seemingly different price of gold in line 2 of the same section of the Edict, which might well be a charge for drawing gold rather than a price for bullion.

10 GOLD AND SILVER STANDARDS

heavier than those of Marcus, while his denarii show a decided decrease in weight. This decrease in the denarius was accompanied by equally pronounced decreases in the weights of the eastern imperial drachmae. In view of the fact that none of these decreased weights were adopted either by Pertinax or Septimius it would seem probable that Commodus attempted to correct the effect of his own extravagance and the financial disturbances caused by his father's wars by a drastic cut in the weight of the silver coin.

In the period from A.D. 193 to 215 the ratio between gold and silver, as shown by the coins, remained somewhat less than it had been earlier in the second century, but it still seems within the range of possibilities for the Neronian ratio of 1 : 11.72.

With the introduction of the antoninianus by Caracalla in A.D. 215 and the simultaneous decrease in weight of the aureus there is a change in the ratio of gold and silver. This apparently is the first indication of a decided fall in the relative value of silver to gold. It may be mentioned that during the fourth century the relative value of silver sank still further, until the ratio reached 1 : 18.¹⁵ Macrinus did not adopt the new weights of Caracalla for his gold but coined on the pre-reform standard (see Table B). Under Elagabalus as under Galba we find two distinct weights in the gold aureus, one on the reformed standard of Caracalla in the mint at Rome, the other issued by the mint at Antioch on Cara-

¹⁵ See Preisigke, *SB.*, 6086.

calla's pre-reform standard. Perhaps it is an accident due to the small number of coins involved that the denarii issued at Antioch are considerably lighter in weight than the denarii issued at Rome. The fact that the ratios found by using the weights of the antoniniani and denarii issued at Rome are practically identical and that they are in reasonable accord with the ratio for the period A.D. 215 to 217 would seem to indicate that the Antioch ratio may be disregarded.

After Alexander and Maximinus the antoninianus became the common silver coin and the denarius ceased to be issued in commercial quantities, though some were coined later and the coin itself did not disappear entirely from circulation. If one assumes that Alexander, Maximinus, Pupienus and Balbinus coined their gold on the basis of 50 to the pound then the ratio of gold to silver for these three reigns is $1 : 12\frac{1}{2}$ or $1 : 13$.

For the rest of the third century we must depend upon conjecture. Contemporary references indicate no pronounced depreciation in the market value of the denarius until the time of Valerian. From that time until the appearance of the Edict on Prices we are handicapped by an almost complete absence of references to money outside of Egypt. A price of 200 denarii for an altar, that is found in a monument dated A.D. 279/80, is almost the only instance.¹⁶

It was under Valerian and Gallienus that the public lost confidence in the silver coin. While the

¹⁶ *IGRR*, IV, 893.

12 GOLD AND SILVER STANDARDS

better coins of these two rulers contained about 40 and 50 percent of silver respectively, the poor coins of Gallienus had only about 6 per cent of silver. It must have been at this time that an official revaluation of the antoninianus took place, for with political and financial conditions as they were, no government could have maintained the historic relationship. Modern analogies show that when monetary values are undergoing pressure from depreciation, those values slip gradually, but when the climax is reached, the actual débâcle comes quickly. This catastrophe seems to have happened under Gallienus. Unlike the German financial crash after the World War of 1914–18, which reached its climax and was corrected in a period of about six months in 1923, the Roman financial collapse was not finally corrected until some sixty years had passed.

If one assumes that the relation between gold and silver remained at 1 : 14 for the period from A.D. 260 to the time of Diocletian, and also assumes that the value of the so-called silver coin was affected by its silver content, which would be true in its market valuation, even if the government thought otherwise, one can estimate the number of antoniniani to the current aureus and also to the pound of gold for each ruler.¹⁷ That these ratios are at least approximately correct may be inferred from the statement in Diocletian's Edict that a pound of gold was worth 50,000 denarii (= 25,000 antoniniani of the third century).¹⁸

¹⁷ See the last two columns of Table B Part 2.

¹⁸ *Edict Dioclet.* XXX 1a.

From a modern analogy, a possibility not elsewhere discussed may be suggested. Our own government maintains in theory at least a mint ratio of 1 : 16 (actually 1 : 15.998) which for many years has been far different from the ratio shown by the market price of the two metals. About the time of the first World War with gold at \$20 an ounce and silver at \$0.60 an ounce the market ratio was about 1 : 34. Since then gold has risen and silver has fallen, so the present market ratio is about 1 : 90. If this double ratio existed in the Roman Empire, it would help to explain the fall in the value of the subsidiary coinage when people lost faith in the solvency of their government.

There are several minor problems which should be mentioned, even though it is impossible to attempt any definite answers. In view of the very large percentage of alloy in the so-called silver coins during the thirty year period beginning with Valerian, it is reasonable to assume that gold coins became more and more the chief element in the monetary system. It is strange that the first indication of this is found in the fourth century, when for a long period the good silver coin (then called the *siliqua*) was apparently too limited in quantity to serve commercial needs adequately. However other instances of debased coinages have shown that badly debased coins can circulate above their real value until a time of panic, and that such periods of panic are short-lived.¹⁹

It would be interesting to know how the Roman

¹⁹ As in Central Europe after 1919.

14 GOLD AND SILVER STANDARDS

government put gold and silver coins into circulation. Did it ever permit private owners to bring gold and silver bullion to the mint for coinage? Did the operator of a mine leased from the government have to sell to the government at a fixed price, or did he have to depend on private buyers of gold and silver bullion as a market for his product? If we assume that there was no right given to private owners of gold and silver to ask coinage of it at the mint, the only way the government could put coins into circulation, unless it simply gave them away, was in payment of obligations (wages and purchases of supplies) over and above the amount of coins it had collected in taxes or as replacements for older worn coins. This immediately raises the question as to the nature of the bullion market. Large quantities of gold and silver always seem to have been available to the makers of gold and silver plate. It would be interesting to know how they obtained it.

Another point of interest is the degree of control exercised by the central government over the rates of exchange between its own coins, as well as between those coins and the numerous local subsidiary issues. The probability is that very strict control was exercised, but direct evidence is rare. Outside of Egypt, where the local coinage was successfully isolated, there is the statement by Epictetus that the "coinage of Caesar" must be accepted, presumably at its face value, whether the seller wants to or not.²⁰ A few years later, Hadrian laid down

²⁰ *Discourses* lii. 3.3.

regulations controlling the use of imperial and local coins for small purchases at Pergamum.²¹ Here, probably for local reasons, he seems to have limited the use of imperial denarii. Still later, Septimius Severus regulated exchange at Mylasa in an effort to enforce the legal relationship between imperial and local issues.²²

Something should be said concerning the tables that form a large part of this paper.

A.) Weights are given in grains troy to permit more easy classification, but in essential places the metric gram equivalent is also given. The tables are shown with gradations of one grain, both to permit more convenient checking of the inferences based on weights that are made here, and also to permit their possible use for other purposes.

B.) As will be readily appreciated, the chief difficulty in such a study as this is the lack of dependable information. Only one volume of Mattingly and Sydenham's "Roman Imperial Coinage" gives any weights; satisfactory catalogues of great museum collections are practically non-existent; auction catalogues vary in accuracy and for many important collections omit weights entirely. Articles in scientific journals are sometimes no better. Thus in the account of the gold hoard found at Italica, to mention but one example, weights are so inexact that they could not be incorporated in the tables used here.

²¹ Dittenberger, *OGIS.*, 484. See Broughton's translation, *Econ. Survey*, (ed. Frank), IV. 892 ff.

²² B.C.H., XVIII (1896), 523. See Broughton's translation, *op. cit.* pp. 896 f.

16 GOLD AND SILVER STANDARDS

Much of what is worthwhile in this monograph is due to the help and encouragement of others. In the first place, I am deeply indebted to Professor A. C. Johnson of Princeton, to the late E. T. Newell, President of the American Numismatic Society, and to the very efficient staff at that institution. To Dr. David Magie, to Dr. W. K. Prentice, both of Princeton, to Harold Mattingly, Esq., of the British Museum, I am indebted for suggestions and criticisms. None of these, however, are in any way responsible for errors or for opinions here expressed.

TABLE B
THE GOLD AUREUS^a

	Number of aurei	Point of concn.	Number at this point	Per Cent -1 to +1	Per Cent -2 to +2
Augustus					
	43/30	124	16	78.8	96.9
	III viri	123	17	42.5	65.5
	Others	121	260	71.3	88.5
	11/14	119	35	60.6	83.8
Tiberius	160	119	35	60.6	83.8
Caligula	68	119	28	77.9	92.4
Claudius	363	118	112	68.9	90.6
Nero	169	117	51	73.2	85.7
	54/63	112	58	53.4	67.5
	64/68	112	11	60.9	78.1
Galba	69	112	7	78.6	92.1
	Spain	118			
	Gaul				
	3				
Otho	58	112	12	50.0	81.0
Vitellius	83	112	18	55.4	67.5
Vespasian	666	112	113	56.3	74.2
Titus	88	111	17	45.4	77.3
Domitian					
	81	113 Average			
	81/84	118	12	52.8	71.7
	82/96	116	26	49.6	71.2

^a Coins in this table, as in the others here, have been arranged by weights (in grains). The "point of concentration" is the weight where most coins are found. In the first line the figure under Per Cent -1 to +1 shows the percentage of the 33 coins occurring in this group that weigh between 123 and 125 grains (inclusive); the next column the percentage between 122 and 126 grains. This is an excellent check on the accuracy of minting and also on the accuracy of the frequency table. The ratio of the gram to the grain is 1 : 15.43.

TABLE B—Continued
THE GOLD AUREUS—Continued

Weights are given in grains					
	Number of aurei	Point of concn.	Number at this point	Per Cent -1 to +1	Per Cent -2 to +2
Nerva	64	115	12	51.6	76.6
Trajan	24	113 Average			
98/99	468	111	102	54.5	78.4
Rest	578	111	135	54.0	75.4
Hadrian	758	111	240	61.1	80.6
Pius	578	111	222	77.5	95.3
Marcus	79	112	25	81	90
Commodus	43	111	15	83.7	93
Pertinax	17	103	7	64.7	82.3
Didius	523	112	87	52.6	76.7
Septimius Severus	58	112	12	44.8	65.5
Caracalla	21	100	4	38.1	57.1
211/215	83	111	22	50.6	69.9
216/17	39	98 Average			
Macrinus	27	110	4	66.7	74.1
Elagabalus					
Rome					
Antioch					

IN THE ROMAN EMPIRE

19

TABLE B—Continued
 THE GOLD AUREUS—Continued ²⁴

	under														over	
Totals	31	31/40	41/50	51/60	61/70	71/80	81/90	91/100	101/105	105	105	105	105	105	105	105
105 Alexander Severus			5	1	2		5	61	26	5						
11 Maximinus				1		2			3							
2 Balbinus, etc.							2									
95 Gordian III			1	1	17	65	10									1
45 Philip			2	1	25	12	1	1								3
96 Decius		1		16	51	24	2	1								1
52 Trebonianus		1	3	13	10		13	11								1
53 Volusianus		2	7	7	5	4	13	15								
4 Aemilianus			2	1	1											
205 Valerian	13	70	71	24	16	6	4	1								
280 Gallienus, sole	62	21	24	35	49	42	20	18	5	4						
16 Claudius II						7	8	1								
92 Aurelian			1	2	10	24	22	16	5	12						
76 Tacitus					18	30	6	15	5	2						
144 Probus	1	2	1			17	33	53	21	16						
108 Carus			1	2	53	38	13	1								
150 Carinus				1	37	66	34	10	2							

²⁴ Because no frequency table properly shows the variation in weights from Alexander on, the coins have been shown in groups of 10 grains (about 5/8 of a gram).

20 GOLD AND SILVER STANDARDS

TABLE C
GOLD QUINARII
Weights in Grains

48	Augustus	50	51	52	53	54	55	56	57	58	59	60	61	62	63
48	Tiberius				2	1			1	4	8	18	10	3	1
6	Caligula						1		3	9	19	7	9		
1	Nero								1	1	2	1	1		
1	Vespasian								1	1					
1	Domitian							1							
3	Nerva					1			1	1					
9	Trajan	1		1	2		2	3							
25	Hadrian	1	1	2	4	5	6	3	1	1			1		
22	Pius	1			2	5	5	4	3	1		1			
6	Marcus				1	1	1		2		1				
4	Commodus			1		1	1		1						
174															

After Commodus all gold coins appear in the regular tables

TABLE D
 AVERAGE WEIGHTS IN GRAINS OF SILVER COINS²⁵

		Denarius		Antoninianus		Syrian drachma		Caesarea drachma	
		No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.
Augustus	43/30	100	58.0			92	56.2		
	III Viri	206	60.06						
	Other	65	57.93						
Tiberius		34	56.29					7	53.04
Caligula		13	56.91				56.5	8	53.9
Claudius		33	58.3				52.6	20	56.2
Nero	54/63	19	54.6			264	56.2	69	55.4
	64/68	278	50.46			64	55.2	4	54.2
Galba	Rome	36	50.46			64	56.5		
	Spain	28	51.84						
Otho		32	52.01			52	56.2		
Vitellius		81	51.27						
Vespasian		304	47.99			356	55.6	87	52.9
Titus		129	49.68			20	55.2		
Domitian	81/82	24	49			92	55.7	50	52.7
	83/96	248	51 p.c.						
Nerva		113	50.18			52	57.2	48	51.5

²⁵ Note 3 applies here as well as to the gold coins. Under each heading there are shown where possible the number of coins and the average weight. In a few cases indicated by the letters "p.c." the weights have been distributed on a frequency table and the point of concentration rather than the average weight shown. The Egyptian tetradrachm has been purposely omitted as it requires special treatment. Other eastern tetradrachms have been reduced to drachms in order to show more clearly their relationship to the denarius. The weights used for Claudius have been taken from Homo, *Essai sur le règne de l'empereur Aurélien*.

TABLE D—Continued

	Denarius		Antoninianus		Syrian drachma		Caesarea drachma	
	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.
Trajan	98/9	70 49.6			52 56.2		41 51.2	
	100/117	598 49 p.c.			664 54.2		217 52.1	
Hadrian		786 50 p.c. (?)			40 51.2		84 48.2	
Pius		1002 51 p.c.					33 44.3	
Marcus		840 51 p.c. (?)			1 49.5		85 50	
Commodus		335 44.89			11 45.63		34 37.89	
Pertinax		13 48.14						
Didius		6 44.18						
Septimius Severus		257 48.39			143 50.4		72 47.7	
Caracalla		32 49.2	32 77.30		84 50.8		14 44.5	
Macrinus		36 49.17	1 79.3		64 51.4		6 50	
Elagabalus		68 47.06	42 78.7		68 50.3			
	(Rome)	17 41.20						
	(Antioch)	91 47.60					2 38.19	
Alexander Severus		41 48.38						
Maximinus		1 49.2	21 71.76					
Balbinus, etc.		5 51.2	1587 68.3		76 47.90		4 31.79	
Gordian III								

TABLE D—Continued

	Denarius		Antoninianus		Syrian drachma		Caesarea drachma	
	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.
Philip			1199	64.5	264	46.95		
Decius			1954	62.0	232	47.19		
Trebonianus ²⁸			{	550	54.11	148	47.03
Volusianus				36	45.41	
Aemilianus				43	53.5			
Valerian				1266	52.9			
Gallienus								
Claudius								
			Rome	Homo	47.3			
			Other	Homo	52.6			
			Pre-reform	1151	53.8			
Aurelian			Reform	828	58.2			
				16	63.26			
Tacitus				210	57.5			
Probus				24	57.86			
Carus				65	61.10			
Carinus								
Diocletian			Pre-reform					
			Reform	560	47.68			

²⁸ The average weight of the antoninianus includes coins of both emperors. The weights of the Syrian drachma are of each man separately.

TABLE E
FINENESS OF SILVER COINS

	Denarius	Antoninianus	Caesarea	Syria	Alexandria
	No.	No.	No.	No.	No.
	%	%	%	%	%
Augustus					
Tiberius					— 16.0
Caligula					— 25.1
Claudius					3 16.4
Nero					
Galba	4 92.6				1 16.4
Otho	1 98.15				
Vitellius	2 83.7				
Vespasian	8 84.7			1 56.5	2 18.0
Titus	3 81.3				— 16.4
Domitian	9 91.2				
Nerva	3 90.7				— 17.0
Trajan	98/99 1 92.8				
	no date 11 83.8		1 62.5	1 57.2	1 17.0
Hadrian	15 84.1		1 64.1		5 15.7
Pius	16 80.0				3 16.2
Marcus Aurelius	13 75.3				
	161/171				— 16.0
	170/178				— 4.2
	178/180				— 8.0

TABLE E—Continued

	Antoninianus		Caesarea		Syria		Alexandria	
	No.	%	No.	%	No.	%	No.	%
Commodus	10	71.1					1	15.0
Pertinax	2	76						
Didius	1	81					2	10.2
Septimius	13	57.3						
Caracalla	4	60.2	3	58.9				
Macrinus								
Elagabalus	5	49.6	3	42.8			1	7.5
Alexander Severus	12	40.5					2	5.8
Maximinus	2	45.5					1	5.0
Balbinus, etc.	1	49.						
Gordian III			22	41.7			2	6.0
Philip			14	43.7			1	5.0
Decius			13	41.9			1	7.0
Trebonianus			4	35.2				
Volusianus			5	60.9			1	7.5
Aemilianus								

26 GOLD AND SILVER STANDARDS

TABLE E—Continued

	Denarius	Antoninianus	Caesarea	Syria	Alexandria
	No.	%	No.	%	No.
Valerian		2 40.0			1 7.5
Gallienus	poor	3 17.4			
		4 50.9			1 4.0
Claudius	poor	14 6.4			
		7 3.46			37 2.4
	Rome	Homo 1.7/2.4			
Tarraco		Homo 2.5/2.7			
Siscia		Homo 2.75/3.0			
Antioch		Homo 8.75			
Aurelian	Pre-reform	18 3.37			— 2.0
	Reform	14 4.01			
Tacitus		4 4.8			— 1.0
Probus		12 3.35			
Carus		1 4.0			
Carinus		1 5.0			
Diocletian	Pre-reform	3 3.0			1 1.81
	Reform	1 94.3			

BIBLIOGRAPHY

Weights used in this paper have been taken from the following sources. Other works are mentioned in the notes.

CATALOGUES OF PUBLIC AND PRIVATE COLLECTIONS

- Babelon, J. *La collection de monnaies et médailles de M. Carlos de Beistegui*. Paris, Les Beaux-Arts (pref. 1934).
- Cardosa, Anibal. *Catálogo general descriptivo de la Colección Numismática. Museo Nacional de Historia Natural*. Tomo I, *Numismática Antigua*. Buenos Aires, 1919.
- Edwards, Jonathan. *Catalogue of the Greek and Roman coins in the numismatic collection of Yale college*. New Haven, 1880.
- Elmer, Georg. *Weifert Collection*. Wien, 1929.
- Grose, S. W. *Catalogue of the McClean Collection of Greek Coins, Fitzwilliam Museum*. Cambridge, 1923–1929.
- Collection R. Jameson*. Tome II. Paris, 1913.
- Macdonald, George. *Catalogue of Greek Coins in the Hunterian Collection, University of Glasgow*. Glasgow, 1899–1905.
- Mattingly, Harold. *Coins of the Roman Empire in the British Museum*. Vols. I–IV. London, 1923–1940.
- Montéluhet, Achille. *Catalogue du Médaillier. Musée Crozatier, Ville du Puy*. Tome deuxième, Empire romain. Paris, 1913.
- Voetter, Otto. *Sammlung Bachofen von Echt*. Wien, 1903.
- Voetter, Otto. *Collection Ernst Fürst zu Windisch-Grätz*. Bd. VI. Wien, 1904.

28 GOLD AND SILVER STANDARDS

DEALERS' AUCTION AND FIXED PRICE CATALOGUES

Ball Sales, February 9, 1932; Nos. 2, 6, 9; Lager Kat.

Nos. 2, 14, 28, 39.

Basel Münzhandlung Sales, Nos. 3, 6, 8, 10.

Bement Collection (Naville sale, No. VIII).

Bom Sale, 1870.

Braunschweiger Münzverkehr Nos. 2, 4.

Cahn Sales, Nos. 59, 60, 65, 66, 68, 71, 75.

Caruso Collection (Canessa Sale, June 28, 1923).

Ciani Sale, April 28, 1925.

Egger Sales, 3, 9, 41, 45, 46; Lager Kat. Nos. 15, 47,
48, 49, 50, 51, 53, 55.

Gallet Collection (J. Florange Sale, May 28, 1924).

Godart Collection (J. Florange Sale, June 14, 1923).

Haeberlin Collection (Cahn Sale, No. 75).

Hamburger Sale No. 96.

Helbing Sales, April 9, 1913; March 22, 1926; April 12,
1927; Oct. 24, 1927; March 20, 1928; June 20, 1929;
Jan. 31, 1930.

Hess Sales, Dec. 18, 1933; March 7, 1935; No. 194.

Hirsch Sales Nos. 24, 25, 26, 30, 31, 33.

Kiehn Lager Kat. No. 7.

Meuss Lager Kat. No. 27.

Naville Sales (Ars Classica) Nos. 2, 3, 8, 10, 11, 12, 13,
15, 16, 17.

Petrowicz Collection (Naville Sale No. 10).

Prix Collection (Helbing Sale No. 63).

Ratto Sale, April 4, 1927.

Redder Sale, No. 27.

Riechmann Sales Nos. 20, 33; Lager Kat. Nos. 1, 25.

Rosenberg Sale No. 69.

Santamaria Sales, Jan. 16, 1924; Jan. 24, 1938.

Schlessinger Sale, No. 11.

Schulman Sale, Oct. 9, 1933.

Trau Collection (Hess Sale, May 22, 1935).

PERIODICALS

- Atti e Memorie dell'Istituto Italiano di numismatica*,
Vols. III–IV, 1919–21.
- Berliner Münzblätter*, N. F., Jhg. XXXV, 1914.
- Bonner Jahrb.* 111–112.
- Buletinul Societatii Numismatice Romane*, Anul XIV,
1919.
- Bull. Arch. du Comité des travaux hist. et scient.* 1932–33.
- Bull. hist. et scient.*, Auvergne, 1939.
- Bull. soc. pour conserv. monum. hist. d'Alsace*, 1926.
- Fundberichte Schwaben*, 1913.
- Museo Ital. di Antichità Class.* Vol. 2.
- Notizie degli scavi di antichità*, 1935.
- Numismatic Chronicle*, 1897, 1902, 1907, 1912, 1924,
1931, 1933, 1939.
- Numismatische Zeitschrift*, 1893, 1902, 1908, 1914, 1922,
1930, 1931.
- Revue belge de numismatique*, 1931.
- Revue numismatique*, 1889, 1898, 1903, 1904, 1912.
- University of Colorado Studies*, XXV.
- Viestnika Hrv. Arh. Drustva*, 1896, 1900.
- Wiltshire Arch. and Nat. Hist. Magazine*, 1937–38.
- Zeitschrift der Deutschen Morgenländischen Gesellschaft*,
1880.
- Zeitschrift für Numismatik*, 1898, 1914, 1928, 1930.

OTHER PUBLICATIONS

- Alföldi, Andreas. "The first gold issues of the Tetrarchy at Siscia." (In *The Numismatic Chronicle*, 5th Series, Vol. 9, 1929.)
- Babelon, E. *Traité des monnaies grecques et romaines*.
Tome III.
- Bahrfeldt, Max v. *Die Römische Goldmünzenprägung während der Republic und unter Augustus*. Halle, 1923.

30 GOLD AND SILVER STANDARDS

- Blanchet, Adrien. *Études de Numismatique*. Paris, 1892–1901.
Festschrift zu O. Hirschfelds 60 Geburtstage.
Homo, L. *Essai sur le règne de l'Empereur Aurélien*. Paris, 1904.
Hultsch, Friedrich. *Griechische und Römische Metrologie*. Berlin, 1882.
Markoff, Alexis. *Les monnaies de Rois Parthes*. Paris, 1877.
Mattingly-Sydenham. *The Roman Imperial Coinage*.
Mommsen, Theodore. *Geschichte des römischen Münzwesens*. Berlin, 1860.
Ondrouch, V. *Der römische Denarfund von Vyškovce aus der Frühkaiserzeit*. Bratislava, 1934.
Paruck, F. D. J. *Sasanian Coins*. Bombay, 1924.
Prokesch Osten, M. Le Comte. *Les Monnaies des Rois Parthes*. Paris, 1874–75.
Rohde, T. *Die Münzen des Kaisers Aurelianus, seiner Frau Severina und der Fürsten von Palmyra*. Miskoloz, 1881.
Sydenham, E. A. *The Coinage of Caesarea in Cappadocia*. London, 1933.
Waddington, W. H. *Recueil Général des Monnaies Grecques d'Asie Mineure*, Tome I, Fasc. I–IV. Paris, 1904–1925.
Weber, S. H. *An Egyptian Hoard of the Second Century, A.D.* (Numismatic Notes and Monographs No. 54, New York, 1932.)
Wruck, W. *Die syrische Provinzialprägung von Augustus bis Traian*. Stuttgart, 1931.

UNPUBLISHED COLLECTIONS

American Numismatic Society.
Metropolitan Museum of Art.
E. T. Newell.
Princeton University.

CONVERSION OF GRAINS INTO GRAMS

Grs.	Gms.	Grs.	Gms.	Grs.	Gms.	Grs.	Gms.
10	0.648	41	2.656	72	4.665	103	6.674
11	0.712	42	2.72	73	4.729	104	6.739
12	0.777	43	2.785	74	4.794	105	6.804
13	0.842	44	2.85	75	4.859	106	6.868
14	0.907	45	2.915	76	4.924	107	6.933
15	0.972	46	2.98	77	4.989	108	6.998
16	1.036	47	3.045	78	5.054	109	7.063
17	1.101	48	3.11	79	5.119	110	7.128
18	1.166	49	3.175	80	5.184	111	7.192
19	1.231	50	3.24	81	5.248	112	7.257
20	1.296	51	3.304	82	5.312	113	7.322
21	1.36	52	3.368	83	5.378	114	7.387
22	1.425	53	3.434	84	5.442	115	7.452
23	1.49	54	3.498	85	5.508	116	7.516
24	1.555	55	3.564	86	5.572	117	7.581
25	1.62	56	3.628	87	5.637	118	7.646
26	1.684	57	3.693	88	5.702	119	7.711
27	1.749	58	3.758	89	5.767	120	7.776
28	1.814	59	3.823	90	5.832	121	7.84
29	1.879	60	3.888	91	5.896	122	7.905
30	1.944	61	3.952	92	5.961	123	7.97
31	2.008	62	4.017	93	6.026	124	8.035
32	2.073	63	4.082	94	6.091	125	8.10
33	2.138	64	4.146	95	6.156	126	8.164
34	2.202	65	4.211	96	6.22	127	8.229
35	2.267	66	4.276	97	6.285	128	8.294
36	2.332	67	4.341	98	6.35	129	8.359
37	2.397	68	4.406	99	6.415	130	8.424
38	2.462	69	4.471	100	6.48	140	9.072
39	2.527	70	4.536	101	6.544	150	9.72
40	2.592	71	4.60	102	6.609	160	10.368

INDEX OF TABLES

Table

A	The Ratio of Gold to Silver	8
B	The Aureus	17
C	The Gold Quinarius	20
D	Weights of the Silver Coins	21
E	Fineness of Silver Coins	24
F	The Aurei of Augustus	42
G	The Aurei of Tiberius	48
H	The Aurei of Caligula	49
J	The Aurei of Claudius	52
K	The Aurei of Nero	59
L	The Aurei of Galba, Otho, Vitellius	63
M	The Aurei of Vespasian	68
N	The Aurei of Titus	71
O	The Aurei of Domitian	75
P	The Aurei of Nerva	76
Q	Silver Hoards, Augustus to Alexander	83
R	The Aurei of Trajan	89
S	The Aurei of Hadrian	96
T	The Aurei of Pius	101
U	The Aurei of Marcus	107
V	The Aurei of Commodus	112
W	The Aurei of Pertinax and Julianus	113
X	The Aurei of Septimius	120
Y	The Aurei of Caracalla	125
Z	The Aurei of Macrinus	126
AA	The Aurei of Elagabalus	129
AB	The Aurei of Alexander	133
AC	The Aurei of Maximus, Pupienus and Balbinus	136
AD	The Aurei of Gordian III	138
AE	The Aurei of Philip	141
AF	The Aurei of Decius	143

INDEX OF TABLES—*Continued*

Table

AG	The Laureate and Radiate Aurei of Philip, Decius and Trebonianus	148
AH	The Aurei of Trebonianus, Volusianus, Aemilianus	150
AJ	The Aurei of Valerian, Gallienus	162
AK	The Aurei of Claudius II	167
AL	The Aurei of Aurelian	172
AM	The Aurei of Tacitus and Florianus	175
AN	The Aurei of Probus	177
AO	The Aurei of Carus, Carinus, Numerianus .	179
AP	Silver Hoards of the Third Century	192
AQ	The Aurei of Diocletian	196

THE COINAGE OF THE INDIVIDUAL EMPERORS

AUGUSTUS

The aurei of Julius Caesar are said to have been issued on the basis of 40 to the pound, and the denarius at 84 to the pound. Since the Roman pound is usually equated with 327.45 grams or 5057 grains, the theoretical weight of Caesar's aureus is 8.186 grams (126.4 grains or 7.2 Roman scrupulae),¹ and of the denarius 3.89 grams (3.42 Roman scrupulae). Without making any allowance for the cost of minting, which may or may not have been deducted from the weight of the coins, the ratio of gold to silver was 1 : 11.91, assuming that the aureus was freely exchanged for twenty-five denarii in silver.²

From the death of Caesar to about 30 B.C. Octavian seems to have retained the Julian standard for his gold and silver issues. Thirty-three aurei from this period are remarkably uniform in weight; of these twenty-six, or 80%, fall within a range of 123 to 125 grains or within 2% of the theoretical standard.³ From the weights of the aureus and denarius of this period, a ratio between gold and silver of 1 : 11.7 is found.

¹ With the Roman pound at 327.45 grams or 5057 grains.

² This is the ratio in de Ruggiero, *Dizion.*, ii. 1633.

³ These decreases from the theoretical weights may represent the cost of minting: see Mickwitz, *Systeme des röm. Silbergeldes im IV. Jhdt.*, 57.

Augustus is said to have issued lighter aurei after 30 B.C. on the basis of 42 to the Roman pound.⁴ If the denarius was unchanged at 84 to the pound, the ratio of gold to silver becomes 1 : 12.5. However, the available evidence does not support the theory that the new aureus was issued at this rate, which would imply a norm of 120.4 grains (7.79 grams). Omitting the issues struck by the *tresviri* between 19 and 15 B.C. and the Augustan aurei struck after A.D. 11, the weights of 749 aurei which are ascertainable from published descriptions show a definite peak or norm at 121 grains (7.85 grams) with 71% of the entire number falling between 120 and 122 grains and with 88% falling between 119 and 123 grains. Since the theoretical weight of aurei on the basis of 42 to the pound is 120.4 grains, it is difficult to believe that Augustus would have consistently issued gold somewhat overweight with consequent loss to the government. If, however, these aurei were issued at the rate of 41 to the pound, each should weigh 123.3 grains. Therefore the aurei of this period have a point of concentration slightly less than 2% below the theoretical weight,⁵ and this would seem more reasonable from the practical standpoint. On this basis the theoretical ratio of gold to silver would be 1 : 12.2. If the actual coins are considered, with the weight of the aureus taken as 121 grains, and the weight of the denarius as 57.9 grains (based on the ascertain-

⁴ Based on Pliny, *Nat. Hist.*, xxxiii. 3, 13.

⁵ Ondrouch (*Der röm. Denarfund von Vyskovce*, 9) says that from B.C. 9 to A.D. 60 the basis was forty-one to the pound.

36 GOLD AND SILVER STANDARDS

able weights of sixty-five examples),⁶ the ratio of gold to silver is found to be 1 : 11.97.⁷

The point of concentration at 121 grains found from the table of frequencies may be compared with the average weights given by Mattingly:⁸

Number of coins	Mint	Grams	Grains
23	Rome	7.95	122.67
28	Spain	7.83	120.85
44	Lyons	7.84	121.02
20	Eastern	7.78	120.14

The average weight of 752 aurei from all mints is given by Bahrfeldt⁹ as 7.80 grams or 120.3 grains. It will be noticed that neither of these scholars

⁶ BMC., i, lii. Edwards (Yale Collection, 85) gives 3.3 and 3.62 grams; *Berl. Münzbl.* (1914, 120) gives 3.30, 3.30, 2.45, 3.0, 3.75; *Num. Zeit.* (1914, 228) gives 3.78, 3.59; Naville Sale 10 gives 4.0, 3.55, 3.77; Helbing Sale of Mar. 12, 1927, gives 3.9, 3.6, 3.9, 3.6, 3.85, 3.7, 3.55, 3.8, 3.95, 3.6, 3.9, 3.9, 3.6, 3.2, 3.85, 3.4; Helbing Sale of Oct. 24, 1927, gives 3.75, 3.6, 3.6, 3.75, 3.85, 3.5, 3.90; Princeton University has of the III Viri: 3.65, 4.08, 3.68, 3.40, 3.10, 3.63; of Spanish mints 3.79, 3.63, 3.54, 3.74, 3.86, 3.83; of Roman mint 3.78, 3.63; of Lyons 3.78, 3.83, 3.76, 3.78, 3.91, 3.80, 3.71, 3.79, 3.66; of Eastern 3.67, 3.60, 3.66, 3.65, 3.54, 3.66, 3.75, 3.76; Naville Sale 17 gives 4.00, 3.69, 3.87, 3.84, 3.68, 3.88, 3.52; *Bonner Jahrb.* (111/112, 419) gives 3.63, 3.65, 3.56, 3.54; *Notizie degli Scavi* (1935, 366) gives 4 averaging 3.50; *Bull. Soc. Num. Romane* (1919, 127) gives 3.80, 3.60, 3.95, 3.90, 3.75, 3.60 for period B.C. 44 to 27; 3.45, 3.70, 3.80 for moneyers; 3.60, 3.75, 3.95, 3.75, 3.70, 3.75, 3.85, 3.75, 3.90, 3.80, 3.70, 3.75 for later; *Viestnika Hrv. Arheol. Društva* (1896, 22) gives 3.75, 3.72, 3.70, 3.76, 3.68; *Museo Ital. di Antich. Class.* (ii, 290) gives 3.50, 3.62.

⁷ Using Bahrfeldt's average weight of the aureus, the ratio is almost 1 : 12.2.

⁸ BMC. i, li. Hulstsch (*Griechische und römische Metrologie*, 306) gives 7.90 to 7.78 grams.

⁹ *Die röm. Goldmünzenprägung während der Republik und unter Augustus*, 185.

makes any attempt to divide the coins chronologically.

Individual types are sometimes found in sufficient numbers to establish an approximate norm.¹⁰ For example, Cohen 136 dated 15/12 B.C. and Cohen 42 dated A.D. 2/11 show the following results:

Weight in grains	Cohen 136	Cohen 42
117		1
118		3
119	5	4
120	5	19
121	15	36
122	14	7
123	2	6
124	1	3

It will be noticed that there is a tendency toward lighter weights in the later group.

The aurei issued by the *tresviri* at Rome between 19 and 15 B.C. seem to be based on a weight of 123 grains. The minting was somewhat careless and the weights show a rather wide spread. Only 65.5% of a total of 87 coins fall within a range of 121 to 125 grains. This carelessness of the moneyers may have been one of the reasons which led Augustus to do away with their rights over the coinage. Using the average weight of 206 denarii struck by the *tresviri*, the ratio of gold to silver is 1 : 12.2, but if the point of concentration in the following table is used, the ratio is 1 : 12.4.

¹⁰ Frank (*An Economic Survey of Ancient Rome*, v, 21) assumes without justification that the number of coins in each type was about equal.

38 GOLD AND SILVER STANDARDS

The denarii struck by the *tresviri*:¹¹

Weight in grains	Number
48	1
49	2
50	3
51	6
52	4
53	7
54	7
55	9
56	18
57	22
58	18
59	29
60	27
61	31
62	12
63	6
64	2
65	1
66	1
<hr/>	
Total	206

After A.D. 11 the Augustan aureus is definitely lighter in weight, and it may be that it was now issued on a basis of 42 to the pound, or at a theoretical weight of 120.4 grains. The point of concentration seems to be 119 grains or about 1% below the theoretical weight. Of coins whose weight is ascertainable, 90% fall within a range of 117 to 121 grains.

¹¹ Chiefly from BMC. and E. J. Haeberlin Coll. (Cahn-Hess Sale, July 1933).

Both gold and silver issues of Augustus were of exceptional purity, the intention apparently being to issue both as near pure metal as was possible.

The history of the mints under Augustus may be summarized as follows:

31–23 B.C. Gold and silver coined at a travelling mint; about 29 B.C. at Ephesus and Pergamum.

23 B.C. Silver issued at Emerita.

19–18 B.C. Gold and silver issued at Ephesus.

19 B.C. Gold and silver coinage resumed at Rome.

15 B.C. The mint at Lyons opened and the coinage of gold and silver ceased at Rome.

14 B.C. The Roman mint for gold and silver reopened.

12 B.C. The Roman mint again closed and Lyons became the sole source for gold and silver.

Grenier says that gold and silver issues almost cease after 10 B.C.,¹² while Frank¹³ states that the issue of gold and silver from 9 B.C. to A.D. 32 amounted only to 5% of the total amount coined between 30 and 10 B.C. Both statements are based on the number of different types issued at various periods and disregard entirely the fact that one type (as Tiberius 15) might have been issued over a period of many years and others issued for some particular short-lived purpose. Likewise there seems no confirmation for the statement by Warmington that "at first the Romans sent out (to India) under

¹² *Econ. Survey*, ed. Frank, iii, 510.

¹³ *American Journal of Philology*, 1935, 336.

40 GOLD AND SILVER STANDARDS

Augustus very fine pure gold and silver coins, but at the same time tried the effect of bad coins.”¹⁴

When Octavian laid down his exceptional powers in 27 B.C. the military coinage of the East was given up, and requirements were met by provincial issues of silver and bronze which were controlled by the princeps. It seems that official rates of exchange between the local issues and the Roman coinage were fixed by the central government, while the right to make such exchange seems to have been leased to local banks.

Twenty-three tetradrachms from Syria have an average weight of 14.57 grams.¹⁵ This is equivalent to 3.64 grams for the drachma or about 4% below the average weight of the denarius. Weights of the silver coins issued by contemporary Persian rulers afford an interesting comparison with the eastern Roman issues and with the denarius. The average weight of 141 tetradrachms and of 138 drachms struck by Phraates IV (B.C. 37/2) is 13.21 and 3.61 grams respectively.¹⁶ Under Phraates V (B.C. 2/A.D. 4) 28 tetradrachms and 22 drachms average 11.77 and 3.64 grams respectively while under Vonones I (A.D. 8/12) 11 tetradrachms and 22 drachms average 11.51 and 3.68 grams. Five silver obols struck by Phraates IV average 0.69 grams. It will be noticed that the Persians, even with the change in government in the third century,

¹⁴ *Commerce between Roman Empire and India*, 292.

¹⁵ Wruck, *Die Syrische Provinzialprägung*. The high is 15.40 grams, the low 13.55 grams. Egger Sale 46 gives 14.68.

¹⁶ *Sammlung Petrowicz*; BMC.; Naville Sale, 12; Prokesch-Osten, *Monnaies des rois parthes*; Markoff, *Monnaies des rois parthes*.

maintained the weights of their silver drachmae with practically no change.

Of the literary references to gold and silver money, one, often quoted, deserves particular mention. Dio lv. 12, supposedly written in A.D. 229, is commonly used as evidence that the aureus was worth twenty-five drachmae or denarii. This section of Dio, which is devoted to the reign of Augustus, is preserved only in late epitomes made by Zonaras and by Xiphilinus. Both say that among the Romans twenty-five drachmae are worth one gold nomisma (= aureus), and both use the present tense of the verb. Zonaras, however, does not ascribe that valuation to Dio but adds a phrase not in Xiphilinus: "among the Greeks, Dio says that twenty drachmae are exchangeable for a gold nomisma." One may ask why Dio is made to say that among the Greeks the relationship is such and such when he was a Greek and was writing in Greek for people who knew what the relationship was. If the clause was actually written by Dio to explain monetary terms and relationships of the time of Augustus (over 200 years before his own time), why is it given in the present tense, particularly since there is no point to the statement if the relationship was still true when the sentence was written? On the whole it seems reasonable to assume that the equation of one aureus with twenty-five drachmae was inserted by a copyist at a time when the drachma had disappeared from the currency and was a word of antiquarian interest only. Whether this suggestion is accepted or not, there is sufficient

TABLE F
AUGUSTUS AUREI

Grains	Rome 43/30	East 31/29	East 29/27	East 27/20	East 20/18	Spain 19/15	iii viri 19/16	Lyons 15/12	Lyons 11/9	Lyons 8/2	Lyons 2/11	Lyons 11/14
112				1								1
113		1	1			1						1
114												
115		1	1	1		1						1
116		1	1									3
117		2	2	1	2	2		2	1		1	6
118		2	6	1	3	12		11	2	3	6	13
119		7	8		16	17		12	14	12	10	10
120		17	9	22	12	35		39	19	18	23	10
121	1	13	11	19	21	48		42	40	35	31	4
122	4	6	3	9	6	16		13	9	6	10	
123	6	5	7	4	4	5		3	1		6	1
124	16	1	2		5			17			3	
125	4		1					13				
126	2							10				
127								5				
								3				

doubt about the passage to prevent its proper use as evidence for monetary relationships either in the time of Augustus or in the time of Dio.

TIBERIUS

The gold coins of Tiberius show a decrease in weights as compared with those of Augustus, but the distribution is somewhat different. More coins of Tiberius than of Augustus are found above the point of concentration. This may be shown:

AUGUSTUS		TIBERIUS	
Weight in grains	Number	Weight in grains	Number
120	216	118	33
121	275	119	35
122	89	120	29
123	59	121	20

The results shown by tabulating the weights of Cohen type 15, the most common of the gold coins of Tiberius, do not exactly agree with those shown when all the gold coins of Tiberius are considered together:

Weight in grains	Number of Cohen 15
115	3
116	5
117	16
118	18
119	24
120	26
121	11
122	2

44 GOLD AND SILVER STANDARDS

It should be pointed out that this particular coin seems to have been struck over a period of about twenty years.

Mattingly¹⁷ gives the average weight of twenty-nine aurei as 119.69 grains (7.76 grams), while Bahrfeldt¹⁸ gives the average of forty-two as 7.72 grams.

However if 119 grains is considered the point of concentration for all the gold issued by Tiberius, it is found that nearly 84% of the coins fall within a range of 117 to 121 grains. Even though more of the coins than seems normal weigh over 119 grains, this figure of 84% represents good coinage.

The weight of 119 grains indicates a decrease of about 3% below the theoretical weight on the basis of 41 to the pound, or about 1% below the theoretical weight of forty-two to the pound. The latter standard, therefore, seems to be the basis for the coinage of Tiberius.

The average weight of thirty-four denarii indicates a decrease of about $6\frac{1}{2}\%$ below the theoretical weight. Using the weight of 119 grains for the aureus and the average weight of the denarius (56.3 grains, 3.67 grams),¹⁹ the ratio of gold to

¹⁷ BMC., i, li.

¹⁸ Bahrfeldt, *Die röm. Goldmünzenprägung*, 185; Hultsch (*Metrol.*, 308) says 7.78 to 7.74 grams.

¹⁹ BMC., i, lii for 16 coins averaging 3.76 grams; Edwards (Yale Coll.) gives 3.84, 3.26, 3.11, 3.7 grams; *Berl. Münzbl.* (1914, 120) gives 2.85, 2.95, 3.50, 3.55, 3.60; *Num. Zeit.* (1914, 228) gives 3.82, 3.80, 3.67; Cardoso (Cat. Buenos Aires, 96) gives 3.50; Naville Sale 17 gives 3.77, 3.75; Princeton Univ. has 3.86; Amer. Num. Soc. has 3.74, 3.65; Bonner Jahrb. (111/112, 419) gives 3.64, 3.59, 3.54.

silver is 1 : 11.82. Wruck²⁰ gives the average weight of a few tetradrachms from Tarsus as 15.05 grams, while Sydenham²¹ gives the weights of seven drachmae from Caesarea as 56, 55, 54, 53.4, 53, 51.4 and 48.5 grains or an average of 3.44 grams. The coins from Caesarea are therefore about 10% lighter than those from Tarsus. In Persia 56 tetradrachms and 18 drachms issued by Artabanus III (A.D. 10/40) average 12.30 and 3.63 grams respectively.²²

Problems connected with the coinage apparently were as disturbing to Tiberius as to Augustus. Like Augustus, Tiberius divided the right of coinage with the Senate, keeping to himself the sole right to mint gold and silver, but giving the Senate sole control, in theory at least, over the subsidiary coinage. Like Augustus again, Tiberius had his imperial mint for the coinage of gold and silver at Lyons,²³ and this was kept in operation all through his reign.²⁴

Augustus had made an experiment in local issues of base metals in the West; but disturbed, it is claimed, by the nationalistic movements in Gaul and Spain during his own reign, Tiberius attempted

²⁰ Wruck (*Die syrische Provinzialprägung*) calls them Syrian; Egger Sale 46, gives 14.68.

²¹ Sydenham, *Coinage of Caesarea*.

²² *Sammlung Petrowics*; Naville Sale 12; Cahn Sale 71; BMC.; Markoff, *op. cit.*; Prokesch-Osten, *op. cit.*

²³ Mattingly, *Roman Coins*, 112.

²⁴ Sydenham (*Coinage of Nero*, 29) believes that Lyons also became a senatorial mint in A.D. 54, an idea not accepted by Mattingly.

to reverse that policy,²⁶ forcing the western provinces, except Spain perhaps, to depend on subsidiary coins issued by the imperial and senatorial mints. By this action all commercial activity seems to have been hampered because of the insufficiency of the supply of small coins. Some attempts to correct this situation resulted in a few issues of local unofficial coins.²⁶

In the East conditions were different. A mint at Caesarea in Cappadocia began issuing silver, mostly drachmae, on the Syrian system. This mint, which was imperial, continued in operation until the time of Gordian III.²⁷ At Alexandria, Tiberius added to the coinage by issuing a new silver tetradrachm containing about 16% of silver.²⁸ It is proposed to discuss this Egyptian coinage in a separate monograph.

Some of the contemporary references to the aureus and denarius are of interest. Germanicus when in the East apparently ordered that the customs dues at Palmyra should be levied in denarii and that when the charge was smaller than a denarius, it should be levied in Roman asses.²⁹

²⁶ Mattingly, *Roman Coins*, 195; Momigliano, *Claudius*, 40; Jullian (*Hist. de la Gaule*, iv, 286) says the reason was a belief that a uniform coinage would help commerce. Van Nostrand (*Econ. Survey*, iii, 209) says that twenty-seven Spanish towns coined copper under Tiberius, six more than under Augustus.

²⁷ Sutherland, *Romano-British Imitations of Bronze Coins of Claudius I* (Numismatic Notes and Monographs No. 65).

²⁸ Mattingly, *Roman Coins*, 196.

²⁹ *Amer. Jour. Archaeology*, xxxviii, 49. Frank (*Econ. Hist.*, 399) says it contained 25% of silver.

³⁰ IGRR., iii. 1056.

This provision remained in force for over a century. Celsus³⁰ says that there were seven denarii in an ounce, which makes eighty-four to the pound. Tacitus³¹ tells of soldiers asking a wage of one denarius a day, a demand that was refused. Matthew³² speaks of a jar of nard worth 300 denarii. Suetonius³³ mentions aurei in connection with a story about Tiberius, while Strabo says³⁴ that both gold and silver were coined in Lyons.

As a matter of interest, all the references to money that occur in the New Testament are gathered together here:

Talent: Matthew xviii: 23f; xxv: 14f.

Piece of gold (χρυσός): Matt. x: 9; James v: 3.

Piece of gold (χρυσόν): Acts iii: 6; xx: 33; I Peter i: 18.

Stater: Matt. xvii: 27.

Two-drachma piece (as a tax): Matt. xvii: 24.

Piece of silver (δραχμή): Matt. xxvi: 15; xxvii: 3, 5; xxv: 18; xxviii: 12; Mark xiv: 11; Luke ix: 3; xix: 15; xxii: 5; Acts vii: 16; viii: 20; xix: 20.

Denarius: Matt. xxii: 19; Mark xii: 15; vi: 37; xiv: 5; Luke xx: 24; vii: 41; x: 35; John vi: 7; xii: 5; Revel. vi: 6.

Drachma: Luke xv: 8.

Assarion: Matt. x: 29; Luke xii: 6.

³⁰ Celsus, v, 17, 1.

³¹ Tacitus, Ann., i, 17; 26; Matt. (xx, 2) indicates a denarius was a day's pay.

³² Matt., xiv, 5.

³³ Suet., Claud., 5.

³⁴ Strabo, iv, 3, 2, (p. 192), dated A.D. 18.

48 GOLD AND SILVER STANDARDS

Lepton: Mark xii: 42, which seems to say that two lepta equal one quadrans; Luke xii: 59; xxi: 2.

Quadrans: Math. v: 26. This relates the same incident told in Luke xii: 59 which seems to give the lepton and the quadrans equal value.

It will be noticed that the terms used for the silver and copper coinage are a mixture of Greek and Latin words. Seemingly imperial coins circulated freely side by side with the strictly local coinages.

TABLE G
TIBERIUS AUREI

Grains	14/15	14/23	15/16	16/37	26/37
109				1	
110					
111				1	
112					1
113		1		1	
114					
115	1	2		3	
116	1		2	5	
117		2	1	14	
118	2	7	5	19	
119		3	4	27	1
120	1	1	3	24	
121		5	1	13	1
122		2	1	3	
123				1	

CALIGULA

The sixty-eight aurei of this reign show a point of concentration at 119 grains, exactly the same as under Tiberius. But the quality of Caligula's coinage, if one may judge from the comparatively few coins, shows an improvement over that of Tiberius. More than 92% of the coins of Caligula

fall within a range of 117 to 121 grains, as compared with 84% of the coins of Tiberius.

Mattingly gives an average weight for the aurei of Caligula of 119.23 grains (7.72 grams)³⁵, while Bahrfeldt gives an average of 7.70 grams.³⁶ The average weight of the denarius shows a slight increase over that of Tiberius, being 56.91 grains

TABLE H
CALIGULA AUREI

Grains	Lyons 37/38	Rome 37/38	39/40
110			
111			
112	1		
113			
114			
115	1		
116	1		
117	4	2	1
118	5	9	4
119	12	8	8
120	3	2	2
121	1	1	1
122			1
123			
124	1		

(3.69 grams).³⁷ As indicated by the coins, the ratio of gold to silver is 1 : 11.94.

Wruck gives 14.65 grams as the average weight of the Syrian tetradrachm, while Sydenham gives weights of 59, 55.5, 53.2, 50.9, 50.3, 47.5 grains for

³⁵ BMC., i, li based on 29 coins.

³⁶ *Die röm. Goldmünzenprägung*, 185, based on 29 coins.

³⁷ BMC. (i, lii) based on 11 coins gives 57.77 grains (3.72 grams). Cardoso (*op. cit.*, 101) gives one at 2.2; Naville Sale 17 gives one at 3.53; Amer. Num. Soc. has 3.54; *Num. Zeit.* (1914, 228) gives 3.68.

the drachmas and 113 for the didrachm of Caesarea. The Caesarea drachm, therefore, averages 3.49 grams, the Syrian drachm 3.66 grams, the latter being almost exactly the weight of the denarius.

In his handling of the coinage Caligula reversed some of the policies followed by Tiberius.³⁸ Soon after his accession in A.D. 37 he closed the mint at Lyons and reopened the imperial mint at Rome.

CLAUDIUS

Included here with the coins of Claudius are those of Nero Drusus, of Agrippina (in part), and of Nero as Caesar. The point of concentration is a little lower than in the two preceding reigns, being found at 118 grains (7.65 grams). About 91% of the total of 363 coins are found within a range of 116 to 120 grains, representing an excellent quality of workmanship. Bahrfeldt suggests that there was a change in weights about A.D. 45,³⁹ but the present tables give no clear indication of such a change.

Mattingly gives the average weight of 104 aurei as 117.82 grains (7.63 grams), while Bahrfeldt gives an average of 7.71 grams for eighty-six coins issued between A.D. 41 and 45, and of 7.67 grams for fifty-six coins issued between A.D. 46 and 54.⁴⁰ However, a difference so small, less than 1%, is inconclusive, for it is less than a normal variation in striking to the same standard.

³⁸ Mattingly, *Roman Coins*, 113; Burns, *Money and Monetary Policy*, 101.

³⁹ Bahrfeldt, *op. cit.*, 185.

⁴⁰ Hultsch (*Metrol.*, 306) says 7.70 to 7.68 grams.

According to Mattingly twenty-nine denarii average 57.77 grains (3.75 grams),⁴¹ but weights from other sources slightly increase this average. Elmer believes that about A.D. 51,⁴² there was a decrease in the theoretical weight of the denarius from the Augustan standard of one eighty-fourth of a pound to one-ninetieth of a pound but the evidence for this is not convincing. Wruck gives 13.65 grams as the average weight of the Syrian tetradrachm, while Sydenham gives the weights of ten didrachmae of Caesarea, ranging from 117.5 to 103.3 grains with an average of 113.1 grains (7.33 grams). The Syrian drachma was equal therefore to 3.41 grams, the Caesarea drachma to 3.67 grams.

In Persia⁴³ 71 tetradrachms and 52 drachmae struck by Gotarzes (A.D. 40/51) average 12.72 and 3.67 grams respectively, while 66 tetradrachms and 12 drachmae struck by Vardanes I (A.D. 41/45) average 12.51 and 3.58 grams. Eight tetradrachms struck by Vonones II (A.D. 52/55) average 13.86 grams, while five drachmae struck by Meherdates (A.D. 49/50) average 3.59 grams.

On the basis of 118 grains for the aureus and 58.3 grains for the denarius, the ratio of gold to silver is 1 : 12.33.

It has been said⁴⁴ that four-fifths of the coins issued by Claudius were debased, but for this

⁴¹ *Berl. Münzbl.* (1914, 120) gives 3.55, 3.75; Naville Sale 17 gives 3.65, 3.47; Amer. Num. Soc. has 3.76.

⁴² Elmer, *Verzeichnis*.

⁴³ *Sammlung Petrowicz*; Naville Sale 12: BMC.; Prokech-Osten, *op. cit.*

⁴⁴ Burns, *op. cit.*, 167.

statement there seems to be no satisfactory evidence. A contemporary writer, Scribonius Largus,⁴⁶ says there were eighty-four denarii in the pound.

In parts of the west, at least, a shortage of subsidiary coins led to the appearance of large numbers of local imitations. In Britain the condition lasted, it is said, until the time of Trajan,⁴⁷ and so great is the number of these local imitations that it seems their manufacture must have been tolerated, if not encouraged, by the central government. Apparently the same condition was true in Germany, for it is said that of the contemporary coins at Hofheim about 20% are imitations.⁴⁸

TABLE J
CLAUDIUS AUREI

Grains	41/2	41/45	43/4	44/5	46/7	49/50	50/54	51/2	51/54	No Date
113									1	
114		1			2				1	1
115	2	3		1	2		1		6	
116	1	3	2		2	1	2		7	1
117	3	11	1	4	6	2	15	1	9	3
118	21	24	1	2	17	6	16	4	20	1
119	15	16	3	5	18	8	7	3	6	2
120	9	16	3	7	9	4	1	2	4	5
121	2	2	1	1	2	1				2
122					1	1				
123										
124										
125										
126										

⁴⁶ Scribonius Largus, p. 6, 16 (ed. Helmreich).

⁴⁷ *Econ. Survey*, iii, 62; Sutherland, *Romano-British Imitations*.

⁴⁸ Sutherland, *op. cit.*, p. 3.

NERO

From a monetary point of view, the reign of Nero is divided into two parts, the dividing point being the year A.D. 63/64, when the currency standards were revised.

FIRST PERIOD. The point of concentration of the 108 aurei from this period seems to be at 117 grains, indicating a slight decrease from the coins of Claudius. The quality of the coinage is indicated by the fact that 85.7% of the coins fall within a range of 115 to 119 grains. Mattingly gives the average weight of forty aurei as 117.93 grains (7.64 grams), while Bahrfeldt gives 7.639 grams as the average of seventy-four coins.⁴⁹ Nineteen denarii are said to average 54.6 grains (3.54 grams).⁵⁰ Wruck gives 14.53 grams as the average of sixty-six Syrian tetradrachms⁵¹ with a high of 15.54 and a low of 12.41 grams. Sydenham gives five tetradrachms of Caesarea with an average of 224 grains, nineteen didrachmae with an average of 111.8 grains and eleven drachmae with an average of 52.3 grains.⁵² The Syrian drachma averaged, therefore, 3.64 grams, the Caesarea drachma 3.59 grams.

In Persia 73 tetradrachms and 27 drachmae

⁴⁹ It is unfortunate that the coins from Italica in *Num. Zeit.*, 1902 cannot be used in the present tabulation, for the weights given are only approximations.

⁵⁰ Montelhet (*Musée Crozatier*, ii, 48) gives one dated A.D. 51 at 3.18; Naville Sale 2 gives 3.54, 3.50, 3.37, 3.26; Naville Sale 17 gives 3.56.

⁵¹ Egger Sale 46 gives 14.21, 15.25; *Num. Chron.* (1931, 160) gives 216.6, 225.4, 222.4 grains.

⁵² In addition, Naville Sale 17 gives 7.22 grams.

54 GOLD AND SILVER STANDARDS

issued by Volagases I (A.D. 51/77) average 11.89 and 3.53 grams respectively, while 9 tetradrachms and 7 drachmae issued by Artabanus IV (A.D. 59/67) average 11.84 and 3.49 grams.⁵³

Using the actual weights of the aureus and of the denarius, we find a ratio between gold and silver of 1 : 11.66.

It has been suggested⁵⁴ that all gold and silver minted between A.D. 54 and 63 was issued by the senate, but this idea has not found acceptance.⁵⁵

SECOND PERIOD, A.D. 64 to 68. Apparently early in A.D. 64 Nero put into effect his reform of the currency.⁵⁶ The new gold aureus was issued on the basis of forty-five to the pound, equivalent to 112.4 grains, or 7.28 grams, or 6.4 Roman scrupulae,⁵⁷ while the denarius was issued on the basis of 96 to the pound, equivalent to 52.7 grains, or 3.41 grams, or 3 Roman scrupulae. Apparently the percentage of alloy was somewhat increased,⁵⁸ if indeed this is

⁵³ *Sammlung Petrowicz*; Naville Sale 12; BMC.; Prokesch-Osten *op. cit.*; Markoff *op. cit.*

⁵⁴ *Num. Chron.*, 1919, 121.

⁵⁵ *Jour. Roman Studies*, vii, 59ff.

⁵⁶ Pliny, *Hist. Nat.*, xxxiii, 3, 13. Pliny says the weights had been gradually reduced since the time of Caesar. Frank (*Econ. Survey*, v, 35) has confused the aureus and the denarius and so has made utter confusion of this reform.

⁵⁷ BMC., i, xlv, apparently has an error in weights.

⁵⁸ Hammer (*Die Feinheit*, 97) gives two coins with 94.3 of silver and one with 91%. Mattingly (*Roman Coins*, 124) says the alloy was about 10%. Mickwitz (*Geld*, 20) emphasizes the cutting of weight as against the cutting of quality, the latter being the distinguishing characteristic of Trajan's reform. Ondrouch (*Vyskovec*, 11), gives a coin with 86.7 of silver and another with 91.6% but no dates. One Alexandrian tetradrachm is given with 15.5% of silver by Hammer.

not the first time any appreciable amount of alloy is found.

The point of concentration in the weights of 268 aurei belonging to this period is 112 grains (7.27 grams), a decrease of $4\frac{1}{2}\%$ from the pre-reformation. The quality of the coinage shows an even greater decrease, for only $67\frac{1}{2}\%$ of the total coins fall within a range of 110 to 114 grains. The secondary peak found at 108 grains indicates either a sudden carelessness in minting, which is difficult to accept, or the mingling of two standards. There is no other evidence for a second standard in these four years; and it is unfortunate that a more exact dating of the numerous coins of this period cannot be made so that any pronounced change would become evident.

Mattingly gives the average weight of 37 coins as 112.8 grains (7.31 grams), while Bahrfeldt gives an average of eighty-two coins as 7.24 grams. The average weight of twenty-six denarii is given as 49.09 grains (3.18 grams) by Mattingly⁵⁹ while Mickwitz⁶⁰ gives the average weight of 278 denarii as 3.273 grams. Wruck gives the average weight of sixteen Syrian tetradrachms as 14.40 grams, 1% less than the tetradrachm of the pre-reform period. Sydenham gives one Caesarea drachma weighing 54 grains or 3.5 grams.⁶¹

⁵⁹ Edwards (Yale Coll.) gives 3.03, 3.19, 3.31; *Berl. Münzbl.*, (1914, 120) gives one at 3.30; *Num. Zeit.* (1914, 228) gives one at 3.08; Cardoso (*op. cit.*, 107) gives one at 3.5; Ondrouch (*Vyskocce*, 12) gives 3.14, 3.14, 3.23, 3.30; Naville Sale 2 gives 3.53, 3.52; Princeton Univ. has 3.52; Amer. Num. Soc. has 3.39; *Fundber. Schwaben* (1913, 86) gives two averaging 3.03.

⁶⁰ *Systeme*, 42.

⁶¹ Ratto Sale of Apr. 4, 1927, gives 7.62 and 3.13 grams.

Using the actual weights of the aureus and of the denarius, the ratio of gold to silver appears as 1 : 11.26⁶² which is to be compared with the theoretical ratio of 1 : 11.72.

The reason for this reform has been the object of much discussion.⁶³ According to some⁶⁴ it was actuated not by financial stress, but as part of a carefully-thought-out plan to unify the standards of coinage throughout the Empire, the new gold and silver weights being closely connected with the Eastern coinages (Cf. Table D). Others⁶⁵ emphasize the effort to adjust the coinage to changed market values of gold and silver, or as an attempt⁶⁶ to improve trade relations between the Empire and the Far East by reducing the bullion content of the coins chiefly used for that purpose. All of these ideas have been subjected to serious criticism, and as a matter of fact there seem to be at least two simpler reasons. Perhaps the alleged debasement of the silver was an effort to prevent its export out of the Empire by reducing its value as metal, and in this way to help insure an adequate supply of coinage at home.⁶⁷ Perhaps it was only an attempt

⁶² *Rev. Num.*, 1898, 663; 1899, 18. Burns (*op. cit.*, 412) gives the ratio as 1 : 10.6 as does Despau (Les devaluations monetaires dans l'Histoire, 116); Frank, (*Econ. Survey*, v, 91) repeats Mattingly's statement that the real ratio was 1 : 13.

⁶³ Mickwitz (*Geld*, 19) says it is unknown. He does not agree with Mattingly's idea about foreign trade.

⁶⁴ Sydenham, *Coinage of Nero*, 16; *Rev. Num.*, 1898, 659; Mattingly emphatically disagrees.

⁶⁵ Mattingly, *Roman Coins*, 124.

⁶⁶ Mattingly, *loc. cit.*; Burns, *op. cit.*, 412.

⁶⁷ Comparette, *Amer. Jour. Numismatics*, xlvii, 131, but Comparette seems wrong in his ratio of 1 : 9.

to improve the wearing qualities of the coins. Even our modern "sterling" has $7\frac{1}{2}\%$ of alloy, while our modern "coin" silver has 10% of alloy. Whether this change put the coinage on a single gold standard is, unfortunately, a question that cannot be definitely answered. Bimetallism in coinage involves two elements, free coinage and full legal tender, for both metals. While a statement by Epictetus, to be quoted later, implies the second element, we have not the slightest evidence that the government ever permitted private citizens to ask coinage of their gold or silver bullion. However, the maintenance of a pure gold coin circulating apparently at a fixed relation with a silver coin whose silver content was steadily decreased, implies that the silver was a purely fiduciary coin, maintaining its market value because of general faith in the political and financial stability of the government. It will be seen that the first evidence of serious distrust of the subsidiary coinage comes in the middle of the third century, when, under Gallienus, large parts of the empire were temporarily lost and pessimism about the future must have been general.⁶⁸

Mickwitz calls attention to the fact that finds in Germany, whose use of Roman silver was great, show that the new Neronian coins were kept in the Empire, and that the earlier heavier and purer pieces were sent out where they would buy more.

⁶⁸ Rome never had a trimetallic system for copper always becomes a token coinage when both gold and silver enter the monetary system. This country tried unsuccessfully in 1853 to make the 3-cent piece a real rather than a token coin.

Perhaps the Germans simply refused the new coins. If this is so it would indicate that in the Empire both the old and the new denarii were expected to circulate on a parity and by count, not by weight. Mattingly⁶⁹ suggests that Nero may have called in the old coinage. However Table Q, analyzing coin hoards in connection with Trajan's reform of the currency, gives absolutely no indication of any such effort, and one is impelled to the belief that the government by fiat decreed that the old and the new denarii should circulate on a parity or at some fixed rate. But no premium for the old denarii fixed by the government, provided it was based on the actual value of the coins, would have been large enough to prevent the gradual absorption of the older coins in foreign trade if they were preferred by the barbarians.

In view of Nero's monetary reform, it is unfortunate that we have so little information about prices during the reign. Petronius has a general complaint⁷⁰ about rising prices, which he ascribes to a drought.

Some of the contemporary references to the gold and silver coins may be mentioned. Corbulo⁷¹ seems to have re-enacted the older provision that the customs dues at Palmyra should be payable in denarii. Petronius speaks of a slave costing 300 denarii,⁷² and in various places speaks of aurei.⁷³

⁶⁹ *Roman Coins*, 186.

⁷⁰ Petronius, 44. The exact date of this seems uncertain.

⁷¹ IGRR., iii, 1056.

⁷² Petronius, 68.

⁷³ Petronius, 30; 76; 137.

Seneca⁷⁴ says that a man is in debt if he owes aurei, indicating payment by tale perhaps rather than by weight. Although the business records of Lucundus at Pompeii are in sesterces, there are numerous

TABLE K
NERO AUREI

Grains	54/5	55/6	56/7	57/8	58/9	59/60	60/1	61/2	62/3	63/64	64/68
102											1
103											
104											1
105											4
106											6
107											5
108											41
109										1	19
110							1				19
111				1						3	44
112	1							1			58
113	1	1				1				1	41
114	2		1		1		1	1		3	19
115	4						3	2			8
116	5	1	4	2	3	1	3	4	4	3	
117	9	7	2	4	3	3	12	5	1	5	1
118	4	4	1		3	3	13	5	5	4	
119	3	1		1			3		2	2	
120	1					1	1				
121											
122											
123											1

undated references to denarii to be found in that city. Didymus, who is quoted by Priscian, says that an aureus was worth twenty-five denarii.

A wax tablet from Pompeii, probably of A.D. 61⁷⁵,

⁷⁴ *de Benef.*, v, 14, 4.

⁷⁵ C.I.L. iv, tab. cer., 154.1.

60 GOLD AND SILVER STANDARDS

mentions "HS N^oLD argentum probum recte dari stipulata est." (She stipulated that there be given 1450 sesterces of thoroughly good silver).

GALBA

In no other period of seven months in Rome's history were so many coins or so many varieties produced. Galba issued gold at Rome, in Spain, and in Gaul. The point of concentration in the sixty-nine coins assigned to the Roman mint seems to be at 112 grains (7.26 grams) with 78.1% of the coins falling within a range of 110 to 114 grains. This indicates that the Roman mint was continuing the reformed standard of Nero. The point of concentration in fourteen coins assigned to the Spanish mint is 118 grains (7.65 grams) with over 92% of the coins falling within a range of 116 to 120 grains. This seems to indicate that the Spanish province did not like Nero's innovation, and that, if given time, the entire coinage of the Empire might have returned to the pre-Neronian standards. The three Gallic coins seem to follow the Roman rather than the Spanish standard, but the number is too small to permit any definite statement.

This difference in standards is also shown by the average weights of thirty-eight coins given by Mattingly:

Mint	Number of coins	Weight in grams	Weight in grains
Rome	25	7.26	112.06
Spain	10	7.69	118.72
Gaul	3	7.39	114.10

According to Mattingly thirty-six denarii from the Roman mint average 50.46 grains (3.27 grams), while twenty-eight from Spain average 51.84 grains (3.36 grams).⁷⁶ According to Wruck, sixteen Syrian tetradrachms average 14.64 grams, with a high of 15.20 and a low of 13.71 grams.⁷⁷

Hammer⁷⁸ gives analyses of three coins with 92.1% of silver, while Ondrouch⁷⁹ gives one with 94.1%.

In view of the shortness of the reign and of the wide difference in weights between the aurei from the Roman and Spanish mints, it is impossible to show a satisfactory ratio between gold and silver.

OTHO AND VITELLIUS

The fifty-eight aurei of Otho show a point of concentration at 111 grains, which is to be compared with the average weight of seventeen aurei of 111.71 grains (7.24 grams) given by Mattingly. Both weights indicate that Otho continued the reform standard of Nero. The average weight of

⁷⁶ BMC., i, lii. There is an error in the statement about the Gallic denarii. Ondrouch (*op. cit.*, 12) gives 3.20, 3.24; Edwards (Yale Coll., 88) gives 3.18, 3.10; *Berl. Münzbl.*, (1914, 120) gives 3.50, 3.45, 3.50, 3.25, 3.43, Cardoso (*op. cit.*, 112) gives 3.5; *Num. Zeit.*, (1914, 228) gives 3.14, 3.33; *Num. Chron.*, (1939, 216) gives 3.46, 3.45, 3.15, 3.19; Naville Sale 17 gives 3.12, 3.28, 3.29, 3.52, 3.23, 3.28; Helbing Sale of Oct. 24, 1937, gives 3.2, 3.0; Princeton Univ. has 3.42, 3.34; *Num. Chron.*, (1931, 164) gives 48.2 grains; *Bonner Jahrb.*, (111/112, 419) gives 3.57 grams; *Museo Ital. de Antich. Class.* (ii, 290) gives one at 3.51.

⁷⁷ *Num. Chron.*, (1931, 164) gives one at 223.3 grains.

⁷⁸ *Die Feingehalt* 97.

⁷⁹ *Vyskovce*, 11.

62 GOLD AND SILVER STANDARDS

thirty-two denarii is 52.01 grains (3.37 grams).⁸⁰ Thirteen Syrian tetradrachms, according to Wruck, average 14.57 grams with a high of 15.03 and a low of 12.95 grams.⁸¹ Ondrouch⁸² gives an analysis of one coin with 98.15% of silver.

The eighty-three aurei of Vitellius indicate a point of concentration at 112 grains, with over 67% of the coins falling within a range of 110 to 114 grains. Vitellius coined gold at three mints and Mattingly gives average weights for each:

Mint	Number of coins	Weight in grams	Weight in grains
Rome	21	7.25	111.97
Lyons	4	7.32	112.95
Spain	10	7.32	112.95

The average weight of the denarius shows a wider range:⁸³

⁸⁰ Ondrouch (*op. cit.*, 12) gives 3.03, 3.18, 3.23; *Berl. Münzbl.*, (1914, 120) gives 3.30, 2.45, 3.58; *Num. Zeit.*, (1914, 228) gives 3.36, 3.39; Naville Sale 17 gives 3.46, 3.36; Princeton Univ. has 3.13, 3.39; Helbing Sale of Oct. 24, 1927, gives 3.4; *Num. Chron.*, (1931, 164) gives 51.6 grains; Amer. Num. Soc. has 3.53. *Notizie degli Scavi* (1935, 366) gives one at 3.40; *Museo Ital.* (ii, 290) gives 3.36, 3.53, 3.66.

⁸¹ *Num. Chron.*, (1931, 160) gives 215.8 grains.

⁸² Ondrouch, *op. cit.*, 11. Hammer (*op. cit.*, 112) gives one Alexandrian tetradrachm with 16.4% of silver.

⁸³ Ondrouch (*op. cit.*, 12) gives 3.09, 3.13, 3.16; Edwards (Yale Coll., 89) gives 2.83, 3.26; *Berl. Münzbl.* (1914, 120) gives 3.0, 3.25, 3.60, 3.25, 3.40, 3.45, 3.50, 3.43, 3.35, 3.40, 3.45; *Num. Zeit.* (1914, 228) gives 3.14, 2.17, 3.34, 3.27, 3.06; Naville Sale 17 gives 3.57, 3.88; Helbing Sale, 10/24/27 gives 3.1, 2.9, 3.15; Princeton Univ. has 3.17, 3.01; Amer. Num. Soc. ha. 3.53; *Num. Chron.* (1931, 164) gives 48.7, 50.9 grains; *Notizie* (1935, 366) gives two averaging 3.40; *Fundber. Schwaben* (1913, 86) gives 4.98, 3.24; *Mus. Ital.* (ii, 290) gives 3.55, 3.60.

Mint	Number of coins	Weight in grams	Weight in grains
Rome	27	3.23	49.78
Spain	11	3.53	54.38
Lyons	10	3.36	51.76

An analysis of two coins shows one with 80.8%,⁸⁴ and one with 86.5% of silver.⁸⁵

The coins of Otho indicate a ratio between gold and silver of 1 : 11.71, while those of Vitellius indicate a ratio of 1 : 11.44.

TABLE L

AUREI

Grains	Rome	Galba Spain	Gaul	Otho	Vitellius
95					1
104	1			1	
105					4
106	1			1	2
107	1			3	3
108	8			2	7
109	2			4	5
110	4			10	3
111	14			8	14
112	11			12	18
113	17		2	9	14
114	8	1		8	7
115					4
116	1		1		
117		2			1
118	1	7			
119		2			
120		2			

⁸⁴ Hammer, 97.

⁸⁵ Ondrouch, 11.

64 GOLD AND SILVER STANDARDS

VESPASIAN

The aurei of Vespasian⁸⁶ indicate either poor minting control or, less likely, a difference in standards at different mints or times. It should be pointed out, however, that the table M seems to indicate a tendency toward heavier coins in the eastern mints. The distribution of the weights of the individual coins, disregarding those under or over the range shown here, is as follows:

Weight in grains	Years		Total
	69/72	73/79	
108	27	39	66
109	13	24	37
110	29	49	78
111	55	83	138
112	35	78	113
113	35	89	124
114	9	32	41
115	5	10	15

If the totals are considered and if the point of concentration is considered to be 112 grains, then 56.3% of the total fall within a range of 111 to 113 grains and 74.2% within a range of 110 to 114 grains. These results are not appreciably changed if one takes 111 grains as the point of concentration in the earlier group and 112 grains in the later group.

⁸⁶ Kubitschek (*Rundschau über ein Quinquennium*), says that under the Flavian dynasty an aureus of about 7.4 grams was exchanged with 25 denarii of 3.41 grams and of about 90% purity.

Mattingly⁸⁷ gives the following average weights:

Mint	Number of coins	Weight in grains	Weight in grams
Rome	86	112.24	7.27*
Tarraco	16	111.9	7.25
Lyons	40	112.15	7.26

* With a peak at 112.5 grains.

The average weight of 304 denarii from various mints is 47.99 grains (3.11 grams), but no definite peak is shown.⁸⁸ Sydenham gives weights of twenty-four didrachmae of Caesarea that average 106.0 grains, and of six drachmae that average 53.7 grains.⁸⁹ According to Wruck, eighty-seven Syrian tetradrachms have an average weight of 14.43

⁸⁷ BMC., ii, xiv; Hultsch, (*Metrol.*, 306) gives the average as 7.30 grams.

⁸⁸ Ondrouch (*Vyskovce*) gives 2.95, 3.12, 3.16, 3.16, 3.30, 3.30, 3.30; Edwards (Yale Coll., 89) gives 2.5, 3.11, 2.99, 3.56, 3.36, 3.17, 2.85, 2.83, 3.32, 3.46; *Num. Zeit.* (1914, 228) gives 3.17, 3.15, 2.69, 2.75, 3.42; *Berl. Münzbl.* (1914, 120) gives 3.35; Cardoso (*op. cit.*, 116) gives 2.7, 3.2, 3.5, 3.0, 3.0, 3.2, 3.3; Naville Sale 17 gives 3.10 from Ephesus and 2.85, 3.43, 3.63, 3.05 from Rome. Helbing Sale 10/24/27 gives 3.25, 3.4; *Fundber. Schwaben* (1913, 86) gives sixteen that average 2.992 and one of Titus at 2.9; *Notisie* (1935, 366) gives seven of Vespasian and three of Domitian Caesar all averaging 3.40; *Museo Ital.* (ii, 290) gives 3.44, 3.94, 3.56, 3.50, 3.48, 3.54, 3.54, 3.56, 3.34, 3.55, 3.56, 3.40, 3.59, 3.58, 3.48, 3.58; for Titus Caesar 3.56, 3.60, 3.63, 3.59; for Domitian Caesar 3.49, 3.45, 3.50, 3.60, 3.45, 3.51; Princeton Univ. has 2.84, 3.06, 3.04, 3.10, 3.33, 2.91, 3.29, 2.90, 3.11, 2.94, 2.70, 3.15, 3.23, 2.85, 2.87, 3.38, 2.91, 2.90, 3.14; Amer. Num. Soc. has 3.15, 2.88, 3.30, 3.19; *Num. Chron.* (1931, 164) gives 50.4, 50.3, 50.5, 49.7, 43.4 grains.

⁸⁹ Egger Sale 46 gives a drachma at 3.01 and a didrachma at 6.94; Ratto Sale 4/4/27 gives 6.83, 6.86, 6.86, 6.93, 6.59, 6.67, 6.93; Ciani Sale of Apr. 28, 1925 gives 7.0, 6.45, 7.15, 6.55, 6.50, 6.95, 6.70, 7.20.

66 GOLD AND SILVER STANDARDS

grams with a high of 17.60 and a low of 12.50 grams.⁹⁰

Hammer⁹¹ gives analyses of six coins, one each with 88.6, 88.1, 87.8, 80.1, 80.0, and 79.8% of silver, while Ondrouch⁹² gives one each with 89.4 and 85.1% of silver.

Using the actual weights of the aureus and of the denarius, the ratio between gold and silver is 1 : 10.71.

In the struggle for control of the Empire, Vespasian had opened mints for gold and silver at Antioch (closed in A.D. 72), Alexandria (closed in 70 or 71), Ephesus (closed in A.D. 74), Byzantium, Tarraco (closed in A.D. 72 or 73), and Lyons (closed in A.D. 72 or 73). After his authority was established, Vespasian centralized the coinage of gold and silver at Rome. Though the Lyons mint was re-opened late in the reign, it was for subsidiary coins only, not for gold or silver.

Until the time of Vespasian the silver money of Rhodes circulated in Asia Minor, although actual coinage had ceased before then.⁹³

From a papyrus of A.D. 72/3⁹⁴ which indicates that the Jewish poll tax of two denarii was paid with 8 drachmae, 2 obols, an effort has been made to show

⁹⁰ Egger Sale 46 gives 14.99; Windisch-Graetz Coll. gives 12.43; *Num. Chron.* (1931, 160) gives 217.1, 213.7, 207.5 grains.

⁹¹ Hammer. 97.

⁹² *Vyskovce*, 11; Hammer (*op. cit.* 112) gives a tetradrachm of Antioch with 56.5% of silver.

⁹³ Chapot, *La Province romaine proconsulaire d'Asie*, 342.

⁹⁴ Wilcken, *Grundzüge*, ii, 61. This tax lasted at least until the time of Trajan.

a ratio between gold and silver of 1 : 7.3.⁹⁶ This ratio is so different from that shown by the relation of the aureus and denarius that it is patently wrong. It also disregards the fact that the Egyptian tetradrachm was a fiat coin.

An inscription from Cibyra⁹⁷ mentions both Rhodian drachmae and Roman denarii and states that the Rhodian drachma, very small and of low weight, was worth 10 asses, while the denarius was worth sixteen. This low valuation of the Rhodian drachma may indicate an effort to force these old silver coins out of circulation, but it should be pointed out that the donation recorded here was made in Rhodian drachmae. Suetonius has an interesting statement to the effect that Vespasian needed forty billion sesterces to restore the public credit. The meaning of this is far from clear. In the modern sense the government had no debts and could have no debts except unpaid current obligations. Even if one assumes that Vespasian owed a year's pay to the entire army, that debt would be only about one percent of the figure mentioned by Suetonius. In another way, the figure of forty billion sesterces is about eighty times the entire income of the government as estimated for the time of Tiberius.⁹⁸ As it stands the figure is so great as to be meaningless.

⁹⁶ *Amer. Jour. Archaeology*, xxxviii, 50; Klio, 1932, 124.

⁹⁷ CIG., 4380; IGRR., iv, 915, dated in A.D. 74; Laum (*Stiftungen in der griechischen und römischen Antike*, ii, 162) gives the date as 73 A.D.

⁹⁸ *Econ. Survey*, v, 45 and 37. Tenney Frank accepts Suetonius at face value.

TABLE M

VESPASIAN AUREI

Grains	Rome 69/70	Lyons 69/70	Asia Minor 69/70	Syria 69/70	Illyr- icum 69/70	Alexan- dria 69/70	Tar- raco 69/72	Rome 70/72	Lyons 70/71	Ephe- sus 70/71	Rome 71/2	Lyons 72/3
103												
104		2										
105												
106				1			1	1				
107		1						1				
108	3	1					8	9	6			1
109	2	2	1					5	2		1	
110	7	3			1			7	9		2	3
111	10	13		1			5	14	10	1		2
112	10	6		1			2	11	5			1
113	5	4		2			4	7	10	1		2
114	3			1				3	1			
115			1					1	2			1
116			1	1								
117				1		1						
118		1		1								
119				1								
120				1								

TABLE M—Continued

Grains	Ephesus 72	Antioch 72	Asia 72/3	Rome 72/3	Rome 73	Lyons 73	Rome 74	75	75/6	75/9	77/8	78/9
97					1		1				1	1
98												1
99					1							
100												
101												
102												
103												1
104												1
105							1		1		2	
106				1		1		2			2	
107					4		2				1	
108					5		6				15	7
109				1	5		4	1	2	7	1	3
110				1	8	2	2	7		6	10	10
111		1		2	15	4	8	9	1	20	15	7
112				5	13		7	3	6	20	12	11
113		1		3	18		7	7	2	22	25	3
114		1	2	2	5		2	1		9	8	3
115	1			1				1	2	2	3	
116					1					2	1	
117		1			1					1		

Pliny⁹⁹ says that the denarius was coined at eighty-four to the pound and the aureus at forty-five. Throughout the Natural History there are numerous prices given in asses, sesterces, and denarii, but none apparently in aurei. The Periplus, written no later than this time, speaks of both aurei and denarii.¹⁰⁰

In a Palmyrene inscription¹⁰¹ of A.D. 70/71 fifteen gold censers are valued at 150 denarii.

TITUS

The aurei of Titus show a point of concentration at 111 grains (7.19 grams). Of the coins shown in the table, 77.3% fall within a range of 109 to 113 grains. Mattingly¹⁰² gives the average weight of 25 coins as 111.64 grains (7.23 grams) with no point of concentration evident. The average weight of 129 denarii¹⁰³ is 49.68 grains (3.22 grams). In 102 denarii weighed by Mattingly there was a well defined peak at 50 grains (3.24 grams).

⁹⁹ Pliny, *Hist. Nat.*, xxxiii, 9, 46; cf. xii, 14, 62.

¹⁰⁰ *Periplus maris Erithr.*, viii, 49. On the date of the Periplus see *Camb. Anc. Hist.*, x, 881. Dio Cassius (lxvi, 14, 5) mentions aurei in connection with Vespasian.

¹⁰¹ Prentice, *Gk. and Latin Inscr.*, 352; *Corp. Inscript. Semit.*, 3923.

¹⁰² BMC., ii, xiv; Hultsch (*Metrol.*, 306) gives an average of 7.29 grams.

¹⁰³ Ondrouch (*Vyskovce*, 12) gives four weights: 3.20, 3.25, 3.28, 3.29; Edwards (Yale Coll.) gives 3.14, 3.4, 3.39, 3.24; Cardoso (*op. cit.*) gives 3.2, 3.0; *Num. Chron.* (1914, 228) gives 3.01, 3.34, 3.17, 2.93; Princeton Univ. has 2.90, 3.21, 2.91, 3.29, 2.83, 2.82, 3.12, 3.11, 3.49, 3.53; Amer. Num. Soc. has 3.19, 3.41, 3.18; *Num. Chron.* (1931, 164) gives 54.9, 50.1, 49.4, 50.4, 49.2 grains. *Fundber. Schwaben* (1913, 86) gives one at 3.35 grams, while *Notizie* (1935, 366) gives 2 that average 3.45.

Using the actual weights of the aureus and the denarius, the ratio of gold to silver is 1 : 11.19.

Wruck gives the average weight of five Syrian tetradrachms as 14.33 grams with a high at 14.48 and a low at 14.25 grams. Ondrouch gives analyses of three coins, one each with 84.5, 83.4, and 76% of silver.¹⁰⁴

TABLE N
TITUS AUREI

Grains	Rome 79	Rome 80
102	1	
103		
104	1	
105		
106	2	1
107		2
108	2	7
109	6	10
110	2	6
111	4	13
112	4	11
113	6	6
114	1	3
115		

DOMITIAN

Domitian seems to have had ideas about the currency differing radically from those of his brother and father. Omitting the coins issued in A.D. 81 and those issued between A.D. 81 and 84, chiefly with the name of Domitia, the remaining aurei show an unsatisfactory point of concentration at 116 grains (7.52 grams). The twelve coins of A.D. 81 show no peak, while the fifty-three coins issued

¹⁰⁴ Ondrouch, 11.

72 GOLD AND SILVER STANDARDS

with the name of Domitia show a peak at 118 or 119 grains, forming the heaviest group of any issued during the reign of Domitian.

Mattingly¹⁰⁶ gives the average weight of three aurei dated in A.D. 81/82 as 111.9 grains (7.25 grams), and of forty minted between A.D. 82 and 96 as 117 grains (7.58 grams). Of course it is unsafe to draw inferences from the weights of three coins, though their average weight is in close agreement with the weight of the aurei of Titus. The twelve coins dated in A.D. 81 that appear in Table O average about 113 grains.

Mattingly gives the average weight of 29 denarii dated in A.D. 81/82 as 49.1 grains (3.18 grams), and of 144 denarii issued between A.D. 83 and 96 as 51.2 grains (3.32 grams) with a peak at 53 grains (3.43 grams). Mickwitz¹⁰⁶ gives the average of sixty denarii as 3.21 grams.

The distribution by weight of available denarii is as follows:¹⁰⁷

¹⁰⁶ BMC., ii, xiv. Frank (*Econ. Survey*, v, 91) says the coins of Domitian and Nerva are "apt to be slightly heavier" than those of Vespasian.

¹⁰⁶ Arctos, iii, 3 quoting Weber.

¹⁰⁷ Ondrouch gives 3.24, 3.30, 3.35, 3.36, 3.36; Edwards (Yale Coll.) gives 3.11, 2.98, 3.35, 3.33, 3.22, 2.96, 3.16, 3.32, 3.26, 3.35; Cardoso (*op. cit.*, 126) gives 3.0, 3.2 as Caesar and 3.2, 3.2, 3.3, 3.0 as Emperor. The Table includes weights given by Montelhet, *Musée Crozatier*, ii, 79; Naville Sale 2; Helbing Sales of Mar. 4, 1927 and Oct. 24, 1927; Weber, *An Egyptian Hoard*; Naville Sale 17; Princeton Univ.; American Num. Soc.; *Num Chron.*, 1931, 164. *Notisie* (1935, 366) gives 9 dated after 81 that average 3.47 and *Fundber. Schwaben*. (1913, 86) gives 3 that average 3.25.

Weight in grains	81/82	81/84	83/96
Less than 44			6
44			1
45	1		4
46	1	1	9
47	6		11
48	3	1	19
49	4		34
50	1		22
51	3		46
52	5		27
53		3	24
54		1	12
55		1	10
56			3

The third group does not seem to bear out the statement of Mattingly that the point of concentration is at 53 grains. Nearly 71% of the coins in the present table fall within a range of 49 to 53 grains with a point of concentration at 51 grains.

According to Wruck, twenty-three Syrian tetradrachms average 14.43 grams with a high of 15.34 and a low of 12.21 grams. Sydenham gives the weights of seventeen didrachmae from Caesarea which average 104.5 grains and of two drachmae which average 53.75 grains.¹⁰⁸ The Syrian drachma averaged, therefore, 3.61 grams while the Caesarea drachma averaged 3.44 grams.

In Persia 52 tetradrachms and 24 drachmae

¹⁰⁸ In addition, Egger Sale 46 gives didrachmae at 6.88 and 7.01; Egger Sale 45 gives 7.23; Naville Sale 15 gives 7.22; Ratto Sale of Apr. 4, 1927, gives 6.93, 7.10, 7.0.

issued by Pacorus II (A.D. 77/110) average 11.72 and 3.55 grams respectively.¹⁰⁹

Using the actual weights of the aureus and denarius, the two periods, that of A.D. 81/82 and that of 83/96, both show approximately the same ratio between gold and silver, namely 1 : 10.94 and 1 : 11.

The reasons for Domitian's return to the heavier standard current before the reform of Nero are difficult to see. The ratio of gold to silver was not changed. The change in weights should have reduced prices, yet Domitian substantially increased the base pay of the army. The change has been praised. One writer¹¹⁰ says of Domitian: "he restored the currency and maintained it at a level of purity that it had seldom reached before and was never to reach again." The practical basis for this eulogy is not clear.

Hammer¹¹¹ gives an analysis of seven coins, one with 92.5, five with 91.4, and one with 86% of silver. Ondrouch¹¹² gives two analyses, one with 93.3, the other with 91.95% of silver. Martial¹¹³ speaks of a price of one denarius for his book. An edict of A.D. 93 issued at Pisidian Antioch¹¹⁴ orders that the price of wheat is not to exceed one denarius per modius, while in Revelation¹¹⁵ the

¹⁰⁹ BMC.; Naville Sale 12; Prokesch-Osten *op. cit.*, Markoff *op. cit.*

¹¹⁰ *Jour. Roman Studies.*, 1930, 70.

¹¹¹ Hammer, 97.

¹¹² *Vyskovce*, 11.

¹¹³ Martial, i, 117; denarii also in ix, 32; ix, 100.

¹¹⁴ *Amer. Phil. Assoc. Trans.*, iv, 5.

¹¹⁵ Revel., vi, 6.

price of one choinix of wheat, or of three choinices of barley, is given as a denarius.

TABLE O

DOMITIAN AUREI

Grains	81	81/4	82	83	84	85	86	88/9	90/1	92/4	95/6
99											
100								1			
101											
102											
103											
104			1								
105											
106		1							1		
107			1	1	1			1			1
108											
109											
110	2	2	1								
111	2							1			
112	3	1			1						
113	1	4	2		1		1	1	2		1
114	1	3		1		1	1	3	1	2	
115		3			1	1	10	6	1	1	1
116	1	5				2	7	7	4	5	1
117		6	3	1	1	1	1	3	3	2	
118	2	12	3	2	1	3	1	2	5	1	
119		10				2		1	1	3	
120		5	1	2	2	4					
121		1	1								
122											

NERVA

The sixty-four aurei listed here show a poor point of concentration at 116 grains (7.52 grams), with 75% of the coins falling within a range of 114 to 118 grains. Nerva therefore was maintaining the heavy standard of Domitian.

Mattingly gives the average weight of thirteen aurei as 116.64 grains (7.56 grams) with a peak at

76 GOLD AND SILVER STANDARDS

the same place.¹¹⁶ The average weight of 113 denarii whose weights are ascertainable is 50.18 grains (3.25 grams). This compares with the average weight of 50.78 grains (3.29 grams) for fifty-three denarii given by Mattingly and with an average of 3.24 grams for twenty-four coins given by Weber.¹¹⁷ According to Wruck, thirteen Syrian tetradrachms¹¹⁸ average 14.83 grams with a high of

TABLE P
NERVA AUREI

Grains	96	97/8
111		1
112	1	1
113	2	3
114	2	5
115	3	11
116	6	6
117	2	9
118	1	3
119		3
120	1	2
121	1	
122	1	

15.60 and a low of 13.39 grams. Sydenham gives the weights of twenty didrachmae from Caesarea which average 102.2 grains.¹¹⁹

¹¹⁶ Hultsch (*Metrol.*, 306) gives 7.45 grams.

¹¹⁷ Ondrouch (*op. cit.*, 12) gives 3.20, 3.35, 3.64; Edwards (*Yale Coll.*) gives 3.33, 3.26, 3.21; *Num. Zeit.* (1914, 228) gives 3.40, 3.25; Cardoso (*op. cit.*) gives 3.0, 3.0; Montelhet (*Musée Crozatier*, ii, 90) gives 2.86, 3.17, 3.08, 3.13, 3.06, 2.90, 3.38, 3.16, 3.40; Naville Sale 2 gives 3.08, 3.34, 3.08, 3.15, 3.47, 3.14, 3.10, 3.32, 3.59; Helbing Sale of Oct. 24, 1927, gives 3.1; Princeton Univ. has 3.01, 3.32, 3.26, 3.32, 3.22, 3.42; Amer. Num. Soc. has 3.20.

¹¹⁸ Egger Sale 46 gives 14.63.

¹¹⁹ In addition Naville Sale 15 gives 6.92; Ratto Sale of Apr. 4, 1927, gives 7.0, 7.0, 6.77.

Mattingly gives the analysis of one coin with 89.1% of silver,¹²⁰ while Hammer¹²¹ gives one with 91.7%, and Ondrouch¹²² gives one with 91.2% of silver.

Based on the actual weights of the aureus and denarius, the ratio of gold to silver is 1 : 10.81.

TRAJAN

It seems probable that early in his reign Trajan reduced the weight of the aureus to the reformed standard of Nero, but unfortunately the weights of the twenty-four coins assigned to A.D. 98/99 give no clear point of concentration. The coins of A.D. 100 and later show a point of concentration at 111 grains with over 78% falling within a range of 109 to 113 grains.

Mattingly gives the average weight of four aurei issued in A.D. 98/99 as 117.25 grains (7.59 grams); of eleven restoration aurei of A.D. 107 as 111.9 grains (7.25 grams), and of 123 other aurei issued in A.D. 100 and later as 111.4 grains (7.22 grams).¹²³ This last group has a definite peak at 111 grains (7.19 grams).

According to Mattingly twenty-three denarii of the restoration series show an average weight of 47.48 grains (3.08 grams) and 464 other denarii an

¹²⁰ BMC., iii, xxi.

¹²¹ Hammer, 97.

¹²² Vyskovce, 11.

¹²³ Hulstsch (*Metrol.*, 306) says 7.21 grams.

78 GOLD AND SILVER STANDARDS

average of 49.64 grains (3.21 grams). This last group has a definite peak at 49 grains (3.17 grams).¹²⁴

The denarii whose weights are given in various sources may be classified as follows:

Number by chronological groups:

Weight in grains	98/99	100	101/2	103/11	112/14	114/17	Restor.	Total
— 38				1		1		2
38				2				2
39		1		1		1		3
40				4	2	2	1	9
41		1		5		2	2	10
42	2			11	3	2		18
43	1	2	2	19	7	6	1	38
44	1	2	4	11	6	7	2	33
45	3	2	2	25	3	5	2	42
46	4	1	9	37	6	10	2	69
47	9	2	6	20	4	7	6	54
48	5	3	2	31	7	5	3	56
49	7	2	14	35	15	10	1	84
50	11	5	4	30	7	5	1	63
51	6	3	5	31	6	4	1	56
52	5		5	17	5	9	2	43
53	12	1	1	16	6	10		46
54	1			12	7	3		23
55	1	1	2	3	4	3		14
56						3		3
57 and over	2				1	1		4

¹²⁴ In the table appear coins from Ondrouch, *Vyskovce*; Edwards, Yale Coll.; Montelhet, *Mus. Crozatier*, ii, 94; *Univ. of Colo. Studies*, xxv, 237; Cardoso, *Buenos Aires*, 136; Naville Sales 10, 17; Princeton Univ.; Amer. Numis. Soc.; *Num. Chron.*, 1931, 164; *Fundber. Schwaben* (1913, 86) gives four dated after 104 that average 3.05.

The seventy denarii listed here under the year A.D. 98/99 have no well-defined point of concentration, though their weights indicate that it should be in excess of 50 grains. The 602 denarii dated in the year A.D. 100 and later have a reasonably well-defined point of concentration at 49 grains, 45.5% of the coins falling within a range of 47 to 51 grains.

Mattingly gives an analysis of three coins with 90.73, 79.6, and 78.1% of silver;¹²⁵ Hammer gives one coin issued in A.D. 98/99 with 92.8% of silver and for coins issued after that date one each with 88.4, 86.2, 85.5, 83.8, 79.2, and 78.5% of silver; Ondrouch¹²⁶ gives one each with 87.3 and 85.1% of silver.

The coins of 98/99 indicate a ratio between gold and silver of 1 : 10.97, while the coins issued in A.D. 100 and later indicate a ratio of 1 : 11.04.¹²⁷ Obviously no change in ratio can be assumed from differences that are so small.

Wruck gives the average weight of thirteen Syrian tetradrachms dated in A.D. 98/99 as 14.56 grams with a high of 15.44 and a low of 14.21 grams. The average weight of 166 tetradrachms dated in A.D. 100 and later is 14.06 grams with a high of 15.25 and a low of 12.28 grams.¹²⁸

¹²⁵ *Klio* (xxvi, 97) says 12 to 20% depreciation. Mattingly (*Roman Coins*, 125) says about 15% debasement.

¹²⁶ Hammer (*op. cit.*, 112) gives one tetradrachm from Caesarea with 62.5 and one from Antioch with 57.2% of silver.

¹²⁷ Mickwitz (*Geld*, 56) believes in a ratio of 1 : 10 for Trajan's reign; in *Aegyptus*, 1933, 102 for that ratio during the second century; Heichelheim (*Klio*, xxv, 124) agrees.

¹²⁸ Egger Sale 46 gives 14.85, 14.76, 15.44, 13.84, 14.37 grams; *Num. Chron.* (1931, 160) gives 221.2, 228.7, 214.7, 209.9, 209.6, 209.3 grains.

For the period A.D. 98/99 Sydenham gives the weights of sixteen didrachmae and of nine drachmae of Caesarea that average 104 grains for the former and 51.1 grains for the latter.¹²⁹ The combined groups show an average of 51.8 grains for the drachma.

For the period of A.D. 100 and later Sydenham¹³⁰ gives the weights of twenty-five tridrachmae that average 162.4 grains; of thirty-five didrachmae that average 102 grains, and of twenty-two drachmae that average 50.4 grains. The combined groups show an average for the drachma of 52.3 grains.

These changes are not what would be expected. Comparing the years A.D. 98/99 with the rest of the reign, the denarius shows a drop of about 8%, the Syrian drachma a drop of about 4%, while the Caesarea drachma shows an increase of about 2%.¹³¹

The reasons that led Trajan to return to the Neronian standard for gold and silver are no more clear than the reasons that led Domitian to attempt a return to the standards of the pre-Neronian period.

In A.D. 107, after the Dacian wars, Trajan

¹²⁹ In addition Ratto Sale of Apr. 4, 1927, gives 10.17, 7.21, both of A.D. 98/99.

¹³⁰ Ratto Sale of Apr. 4, 1927, gives 7.44, 6.14, 6.88, 6.72, 6.54; Ciani Sale of Apr. 18, 1925 gives 14.30, 6.55, 3.05, 10.20, 3.20, 3.30, 6.45; Windisch-Graetz gives 6.20; Egger Sale 46 gives 3.45, 2.91, 3.07, 7.05, 5.64, 7.07, 6.95, 6.73, 5.73, 6.30, 6.45, 6.74; Naville Sale 15 gives 6.65.

¹³¹ The weights of the Alexandrian tetradrachms as given by Milne (*Catalogue of Alexandrian Coins in the Ashmolean Museum*) indicate no change after 98/99 A.D.

"melted down all obsolete coins."¹³² This is all of what Dio may have said on this subject that is preserved in the late epitome made by Xiphilinus. While many guesses have been advanced as to the meaning of this sentence, including attempts to connect it with the reduction of weights that had taken place some seven years earlier, the action actually taken at this time by Trajan in regard to the "obsolete" coins seems to be clearly shown by the analysis of coin hoards which appears on Table Q. In this table the vertical columns list the coins of different periods that are found in hoards presumably buried during the lifetime of the ruler whose name appears at the top of the column. The horizontal lines list the rulers whose coins appear in the hoards. About 115 hoards from all parts of Europe and over 30,000 coins appear in the tabulation.¹³³

¹³² Dio Cassius, lxxviii, 15; Mattingly (BMC., iii, lxxxviii) says "we must suppose that the whole of the coinage down to the reduction of weights by Nero was then called in." He also suggests that the early gold was called in.

¹³³ Because of uncertainties the so-called hoard of Kirkham in *Num. Chron.*, 1936, 316 is not included.

The hoards used to form Table Q are as follows:

Augustus: Villate, Charentenay, Ribnik, Valpovo, Reckelsum.

Tiberius: Laval, Onna, Krefeld, Mainz 1900.

Claudius: Laluque.

Nero: Dombreson.

Vespasian: Stein, Rheingönnheim, Rome.

Domitian: Corbridge, Anglesey, Broos, Aubenton, Otricoli.

Trajan: Bath, Lavenham, Sakka, Mozzatella, Broos, Muncsel.

Hadrian: Gostynin, Niemegk, Swaley, Mallerstang, Waudrez, Volubilis, Castagnaro.

Pius: Carlisle, London, Polnisch-Briesen, Middels Osterloog, Altenmarkt, Bonyhad, Hedderneheim.

Coins issued by Augustus, Tiberius, Caligula, and Claudius are reasonably common in these hoards until the end of Trajan's reign. It is noteworthy that only four coins issued by these rulers occur among the thousands of other coins found in hoards buried from the time of Hadrian to that of Alexander Severus. It may also be noticed that the coins of Marcus Antonius persist through the entire period. It seems clear that what Trajan did in A.D. 107 was to call in all the silver coins issued by Augustus, Tiberius, Caligula and Claudius. It would be reasonable to assume that the denarii issued by Nero before A.D. 63 were also called in, but the lack of information about the dating of many of the Neronian coins in the hoards mentioned here make certainty in this matter impossible.

Unfortunately too few of the hoards of gold coins are recorded with sufficient accuracy to construct a table. The inference, however, from twenty-seven

Footnote 133 continued.

Marcus: Castle Bromwich, Allerton, Fickmühlen, Chalfont St. Giles, Vyskovce, Lindloh, Freesemmoor, Fröndenberg, Erfurt, Siedlimovo, Lengowo, Bor-u-Kluku, Hede, Hinckley, Nuneaton, Knapworth, Pyhrn, Mehr, Deutsch-Altenburg, Tibod, Sotin, Mont, Osiek, Mocsolad, Hallegarda.

Commodus: Djupbrunn, Träskväller, Oja, Lydney, Newbiggin, Havor, Borynia, Gräpel, Bucharest, Ballo, Wien, Kristendorf, Sächsisch-Regen, Karlsburg, Prelasko, Unterammergau, Edwinstowe, Eskelhem, Iwno, Hirschhof.

Septimius: Sindarve, Sojvide, Robbedale, Skovgaard, Denland, Silchester, Sigdes, Robbenarve, Regenwalde, Lashorst, Bristol, Flonheim, Oosterbeek, Waldkirch, Karajeno, Silli-en-Gaufern, Jupille, Starkcsova.

Caracalla: Muswell Hill, Kristendorf, Annecy, Pre-Haut.

Alexander: Hulterstad, Lengerich, St. Mary Cray, Falkirk, Reims, Colchester, Baden, Unterhaidin, Mehadia, Wetzheim, Kucevo.

TABLE Q

	Augustus	Tiberius	Claudius	Nero	Vespasian	Domitian	Trajan	Hadrian	Pius	Marcus	Commodus	Septimius	Caracalla	Elagabalus	Alexander
Alexander															249
Elagabalus															394
Macrinus															96
Caracalla												626	91		739
Septimius												2	332		2078
Didius												17	1		2
Pertinax												633	3		5
Commodus											132	102			463
Marcus										1142	1232	2031	313		1186
Pius									47	1550	1327	1990	301		1120
Hadrian								484	184	1535	951	1088	231		498
Trajan							204	641	216	1539	893	721	237		371
Domitian							61	74	19	129	82	61	29		26
Vespasian						26	259	250	87	529	239	114	77		108
Nerva						13	107	42	18	200	68	61	11		71
Domitian						95	151	197	115	1220	469	407	99		429
Titus						15	7	11	4	62	25	21	5		21
Vespasian						3	4	6	3	45	11	7	5		7
Vitellius						11	6	9	6	38	19	11	6		15
Otho						31	13	15	12	106	39	23	8		31
Galba						3	14								
Nero			1	7	4	3	16								
Claudius			3	2		1									
Caligula			46	80	13	41	3			1	2				
Tiberius		354			23	46	35	1							
Augustus	936	349	13	38	272	393	419	51	62	579	181	89	12		24
Republic	326	662	57	300											

IN THE ROMAN EMPIRE

83

such hoards is that the gold struck before the reform of Nero was likewise called in.

There are at least two important objections to the idea¹³⁴ that Trajan debased the silver money in A.D. 107. In the first place, the weights of extant coins seem to indicate that the reduction of weight and presumably of silver content had occurred at the same time (A.D. 100) that the weight of the aureus was reduced. In the second place, the conquest of Dacia made available to the government very considerable amounts of gold and silver.

The idea of profit for the government as the motivating cause¹³⁵ in such a remelting of old coins seems unsatisfactory, for the number of the old coins in circulation must have been comparatively small and the degree of debasement was not large. Then, again, nothing appears to have been done about the heavy denarii of Domitian and of Nerva. This fact seems to make untenable the idea that Trajan was interested in retiring all coins differing markedly from his own, as an aid toward business convenience. It is interesting to note that Trajan's "melting" of the old coins coincided in date with the appearance of his own restoration series commemorating the great figures of the past.

Mickwitz¹³⁶ considers that Trajan's debasement of the silver was occasioned by a fall in the price of gold brought about by the amount of that metal thrown on the market as a result of the Dacian

¹³⁴ Segre, *Metrol.*, 360.

¹³⁵ Burns, *Money*, 419; Despaux, *Les Devaluations*, 117.

¹³⁶ Geld, 32; see also Klio, 1932, 124; *Econ. Hist.*, 1935, 6.

wars. The result of these wars, he says, was a decline in the relation of gold prices to silver prices of some 3 to 4%, and that this is evidenced by the papyri. But P. Baden 37, which is the chief support of this idea, is too indefinite in its meaning to be used properly in support of this or any other idea. The pertinent sentence of this document is as follows: "gold (an adjective, not a noun), which was selling at 15 drachmae, has fallen to 11." Many attempts at explanation have been made, but the widely divergent theories that are based on this document show that no definite conclusions can be made as to its meaning. Trajan was hardly likely to upset the monetary market by a sudden release of bullion.

This re-adjustment of the currency, both as to weight and to fineness, is one of the important events, economically speaking, of Trajan's reign. It is strange that no adequate reason for it has been found. The history of the reign before the Dacian wars indicates no pressing need of money on the part of the government, while the alleged "orgy of spending from 107 onwards,"¹³⁷ if true, seems to have been based in part at least on the booty from Dacia. Currency depreciation is, it seems, always the result of something that has already happened. The cause in this instance is difficult to find.

In Britain official coins seem to have been so plentiful that local imitations are rare, a condition

¹³⁷ *Camb. Anc. Hist.*, xi, 215.

that lasted well through the century.¹³⁸ This condition could have been brought about by a decline in the activity of local business, as well as by an increase in the supply of imperial coins. Unfortunately we do not know which was the case here. In Scotland¹³⁹ ten coins of pure tin have been found, eight of Trajan and one each of Hadrian and of Marcus Aurelius. Just what these were intended to be is uncertain.

The documents recording the gifts of C. Vibius Salutaris to Ephesus¹⁴⁰ in A.D. 103/4 present some interesting problems. The short Latin inscriptions record the capital sums in sesterces which the accompanying Greek text gives in denarii at the rate of four sesterces to the denarius. Thus 17000 sesterces in one Latin text appears as 4250 denarii in the Greek;¹⁴¹ in another the Latin mentions $33333\frac{1}{2}$ sesterces¹⁴² which the Greek gives as 8333 denarii, 6 asses. This shows that $\frac{3}{8}$ of a denarius is equal to 6 asses ($33333\frac{1}{2} \div 4 = 8333\frac{3}{8}$) and that the denarius therefore was equal to 16 asses. This is not in agreement with the long Greek text given in BM *481. Lines 245ff. show that 750 denarii are to be divided among 1500 persons with the gift to each stated as 9 asses. This indicates

¹³⁸ *Econ. Survey*, iii, 62.

¹³⁹ *Num. Chron.*, 1905, 10.

¹⁴⁰ *Anc. Gk. Inscript. in B. M.*, iii, p. 130; revised text in *op. cit.*, iv, *481. *CIL.*, iii, 14195, 4, 5, 6, 7; Dessau, 7193, 7194. Date A.D. 103/4.

¹⁴¹ This seems to be the sum the long Greek text (BM*481) gives as 4450 denarii.

¹⁴² Which the editor reads twice as $33,323\frac{1}{2}$.

that the denarius was equal to eighteen asses. As will be seen, this rate of 18 asses was the one at which the bankers of Pergamum in the time of Hadrian were required to sell the denarius. Perhaps even under Trajan the rate of exchange fixed by the government was eighteen asses to the denarius, while the rate of sixteen asses found in the bilingual inscriptions was the old traditional relation between the coins. It is, however, far from clear why the bilingual inscriptions should give anything but the true current figure.

Salutaris made two capital gifts, one of 20000 denarii, another of 1500 denarii.¹⁴³ The interest is given as 1800 and 135 denarii, respectively, which proves a rate of nine percent. The text uses three ways of showing this rate of interest: (a) τόκος ἀσσαρίων δεκάδυσ ἀργυρῶν, (b) τόκος δραχμιαῖος and the curious (c) τόκος δραχμιαῖος ἀσσαριαῖος. The rates express the interest per month on each 100 denarii of principal and being legalistic terms naturally should refer to the traditional ratio between the coins concerned. It is not clear why the word "drachma" should be used at all in this connection.¹⁴⁴ The inscription also contains a statement to the effect that if the rate of exchange should go up, more is to be distributed each year. This exchange can refer only to the relative values of the imperial denarius and of the local as. It assumes a greater confidence in

¹⁴³ The inscription gives the total as 11500 denarii due probably to a stone-cutter's error.

¹⁴⁴ The statement in *Econ. Survey*, iv, 900 that the drachma refers to the Rhodian drachma which equalled three quarters of a denarius does not necessarily seem to be implied in this inscription.

88 GOLD AND SILVER STANDARDS

the future of the imperial money than in the local coinage. Nothing is said about a fall in the rate of exchange.

A contemporary inscription from Pergamum¹⁴⁵ mentions "silver denarii," as does a papyrus¹⁴⁶ of the year 117. A Spanish inscription¹⁴⁷ gives the cost of a statuette as 62 denarii, while another¹⁴⁸ mentions a capital gift of 100,000 sesterces which was to be loaned at five percent interest, and which provided that part, at least, of the income was to be distributed in denarii. An African inscription shows cattle taxed four denarii each,¹⁴⁹ and an Italian document¹⁵⁰ shows wheat at one denarius a modius.

Tacitus, in a passage dated in this reign, speaks of the fondness of the German tribes for silver, as it was more convenient to spend than gold; in another passage he says that the Germans prefer the old silver.¹⁵¹ Both Martial¹⁵² and Juvenal¹⁵³ speak of aurei.

Epictetus¹⁵⁴ has a very interesting statement: "for just as neither the banker nor the greengrocer may legally refuse the coinage of Caesar, but if you

¹⁴⁵ IGRR., iv, 494; *ibid.*, 1660 from Tira mentions 5 denarii.

¹⁴⁶ PSI., 1063 (A.D. 117).

¹⁴⁷ CIL., ii, 1163.

¹⁴⁸ CIL., ii, 4511 from Barcino (A.D. 107); CIL., vi, 10229 (A.D. 108) mentions denarii.

¹⁴⁹ Bruns, *Fontes*, 114; Van Nostrand, *Imperial Domains*, 26.

¹⁵⁰ CIL., xi, 6117.

¹⁵¹ Tacitus, *Germ.*, 5, 15; Pliny, *ad Traian.*, x, 116 mentions denarii.

¹⁵² Martial, xii, 65.

¹⁵³ Juvenal, v, 122.

¹⁵⁴ *Disc.*, iii, 3, 3.

present it, whether he will or no, he must turn over to you what you are purchasing with it . . .” This statement, which is localized in Epirus, is not in accord with the regulations laid down by Hadrian at Pergamum, regulations which seem to limit the use of imperial money under certain conditions.

TABLE R
TRAJAN AUREI

Grains	98/9	100	101/2	103/11	107	112/14	114/17
100			1	1			
101							
102							
103						2	
104							1
105			2		1	2	
106	2	1		2			1
107	2	1	1	5	3	2	3
108	1	2	4	18	3	10	15
109		2	6	23	2	14	18
110		5	3	25	6	8	26
111	4	5	6	26	8	21	36
112	1	4	4	24	6	18	24
113	1	1	4	17	4	10	9
114	2		2	7		2	4
115	2		1				1
116	2			1			
117	3		1				
118	2			1		1	
119	1						
120	1						
121				1			

HADRIAN

The 578 aurei of Hadrian and of members of his family show a point of concentration at 111 grains (7.19 grams). Over 75% of the total fall within a range of 109 to 113 grains.

90 GOLD AND SILVER STANDARDS

Mattingly gives the average weight of 179 aurei as 111.91 grains (7.25 grams)¹⁵⁵ with a peak at 110.5 grains (7.16 grams). He also gives the average weight of 733 denarii as 49.64 grains (3.21 grams) with a peak at 49 grains (3.17 grams).

Weights of the denarius may be shown in tabular form as follows:¹⁵⁶

Weight in grains	Numbers by dates of issue							Total
	117/25	125/28	128/32	132/34	134/38	Sabina	No date	
35		1						1
36							1	1
37	1						1	2
38		1					1	2
39				2				2
40		1			2		1	4
41	4				4			8
42	10	3	1	1	4		2	21
43	8	2	2	2	8	1	1	24
44	13	2	3	3	17		4	42
45	10	5	2	2	17	2	3	41
46	20	8	3	6	16	3	11	67
47	18	8	9	5	24	1	2	67
48	21	8	3	3	19	2	4	60
49	27	16	4	7	30	1	6	91
50	23	10	5	4	17	9	3	71
51	28	13	10	4	28	5	5	93
52	27	10	3	4	23	3	5	75
53	13	9	3	3	16	6	3	53
54	14	3	2	3	5	2	3	32
55	4	1		1	7	2	2	17
56	2	1			2	1		6
57	1						1	2
58						1		1
59					2			2
60						1	1	2

¹⁵⁵ Hultsch (*Metrol.*, 306) gives 7.21 grams.

¹⁵⁶ Includes also weights from Ondrouch, *Vyskovce*, 12; Montel-

As will be noticed, there is no well-defined point of concentration, though the table indicates 50 or 51 grains as a possibility.

Two Syrian tetradrachms are said by the B. M. Catalogue to weigh 224.4 and 215.2 grains.¹⁵⁷ Sydenham gives the weights of nine drachmae, of thirty-three didrachmae, and of one tridrachma from Caesarea that average 50.5, 95.4, and 143.5 grains respectively.¹⁵⁸

In Persia 72 tetradrachms and 10 drachmae issued by Volagases II (A.D. 78/147) average 11.09 and 3.64 grams respectively.¹⁵⁹

The silver coins issued at Amisus by Hadrian for himself and in the names of various members of his family show the following distribution.¹⁶⁰ The

het, *Musée Crozatier*, ii; Edwards, Yale Coll.; Cardoso, *Buenos Aires*; Naville, Sales 2, 17; Helbing Sale of Oct. 24, 1927; Amer. Numis. Soc.; *Num. Chron.*, 1931, 164; *Fundber. Schwaben* (1913, 86) gives four that average 3.16.

¹⁵⁷ Hunter Coll. gives 194.9 grains; Egger Sale 46 gives 6.42, 6.25, 6.32, 6.73; Ciani Sale of Apr. 28, 1925 gives 14.42, 13.47, 13.70, 13.87, 12.35.

¹⁵⁸ In addition Ratto Sale of Mar. 4, 1927 gives 10.61, 6.29, 3.29.

¹⁵⁹ BMC.; Naville Sale 12; *Sammlung Petrowicz*; Prokesch-Osten, *op. cit.*

¹⁶⁰ The weights are from Fitzwilliam; Hunter; Weber; BM Cat.; *Rec. Gen. As. Min.* (Waddington); Jameson; Cahn, Sales 65, 71, 75; Grabow; Schlessinger Sale 11; Hirsch Sale 25; Ciani Sale of Apr. 28, 1925; Dieudonne; E. T. Newell.

92 GOLD AND SILVER STANDARDS

tridrachmae and the tetradrachms are not included in this tabulation:¹⁶¹

Weight in grains	Number	Weight in grains	Number
31	3	42	11
32	6	43	15
33	3	44	23
34	7	45	12
35	5	46	13
36	6	47	5
37	8	48	3
38	15	49	0
39	14	50	7
40	13	51	2
41	22		

As was the case with the denarii, this table shows no well-defined point of concentration. It will be noticed that the coins are considerably lighter than the weight of the contemporary denarii.

The weights of the aureus and denarius indicate a ratio between gold and silver of 1 : 11.26.

An analysis of three denarii given by Mattingly shows 85.7, 80.57, and 75.1% of silver. Hammer¹⁶²

¹⁶¹ These weights are:

grains	nos.	grains	nos.	grains	nos.
102	1	120	1	135	1
111	1	121	2	136	1
112	1	126	1	139	1
115	1	127	4	144	1
117	1	128	2	145	2
119	1	129	1	162	1
		132	2		

¹⁶² Hammer, 98.

gives an analysis of nine denarii, one with 91.5, three with 86.7, two with 82.4, one with 81, and two with 80.9% of silver. Ondrouch¹⁶³ gives one each with 84.9 and 84.7% of silver and one coin of Sabina with 92% of silver.

The inscription from Pergamum,¹⁶⁴ to which reference has just been made, illustrates the difficulties faced by merchants and bankers due to the different monies that were current: “. . . I commanded them to appear in order that they might have opportunity to say what they wished. Their manner of exchange was illegal, and they permitted themselves to act unjustly and against their agreement. For although they should have accepted eighteen asses per denarius from the merchants, small dealers, and food dealers, who are accustomed to trade for small bronze coins, and should have paid seventeen asses to those who wished to exchange denarii, they were not satisfied with the exchanging of asses, but even in cases where a man bought food for silver denarii, exacted an as for each denarius. I have therefore decided that it would be well for me to correct this for the future so that they may not make collections from purchasers which they have no permission to receive. In the case, however, of food sold by weight, the price of which is set by the market-masters, I think it right that even those who purchase several mina's worth should pay the

¹⁶³ *Vyskovce*, 11; Hammer (*op. cit.*, 112) gives a tetradrachm of Caesarea with 64.1 and one of Alexandria with 16.5% of silver.

¹⁶⁴ *Athen. Mitth.*, 1902, 78; Dittenberger, *OGIS.*, ii, 484; the translation given here is that in *Econ. Survey* iv, 893 with certain changes.

price in bronze coinage so as to preserve for the city the revenue from the exchange; so too, where several appear to join together in an agreement to make a purchase in silver denarii, and then to divide their purchases, they should pay the dealer in small bronze, so that he may bring it to the banker's table; and they shall pay at the rate of seventeen asses, since the traffic in exchange is supposed to refer to the merchants only. . . ."

This inscription re-affirms the exchange rate of the imperial denarius by the local bank: purchase at 17 asses, sale at 18 asses, thus giving a profit of about 6% on each denarius handled. Hadrian seems to have decided that buyers must offer bronze when purchasing those classes of foodstuffs, the price of which had been fixed by the market masters, thus increasing the business of the money-changers.

It is interesting to note that a contemporary section of the Digest¹⁶⁵ provides that law suits brought by bankers, or brought against them, were to be tried by the prefect. Perhaps there were other cases similar to that at Pergamum.

A contemporary inscription¹⁶⁶ speaks of a gift of one denarius to each citizen of Beneventum, while one from Rome¹⁶⁷ provides gifts of three to five denarii to guild members. Another Pergamene inscription mentions denarii¹⁶⁸ in amounts from one

¹⁶⁵ Digest, i, 12, 14, 2.

¹⁶⁶ CIL., ix, 1619 from Beneventum.

¹⁶⁷ CIL., vi, 33885. Also CIL., xiv, 4743 (A.D. 129) from Ostia.

¹⁶⁸ IGRR., iv, 353.

to one hundred. An inscription from Thyatira¹⁶⁹ mentions a gift of 1500 "silver denarii." An endowment from Aphrodisias¹⁷⁰ had a capital of 264,179 denarii. A fragmentary inscription from Athens,¹⁷¹ which may or may not belong to this period and which bears some resemblance to the alimentary grants of the previous reign, is believed by Mommsen and subsequent commentators to show that one denarius was equal to six drachmae. This is hardly probable, much less certain, and unfortunately the date is far from definite.

The Palmyrene customs dues were payable in denarii.¹⁷² The well-known inscription from Rhodiapolis¹⁷³ shows that in A.D. 131 Opramoas gave 15000 denarii to pay the cost of exchanging money at a festival, while under Hadrian and Pius he gave away more than 350,000 denarii.

A document from Dura dated A.D. 134¹⁷⁴ speaks of "100 drachmae of good silver of the Tyrian standard," while one from Jebel Halakah¹⁷⁵ dated A.D. 120 mentions 1500 denarii as the cost of a wall.

¹⁶⁹ IGRR., iv, 1281 probably of Hadrian. Another Thyatira inscription, *ibid.*, 1275, (A.D. 127 or 183) mentions denarii. IGRR., iii, 648 from Idebessus mentions 1500 denarii as a penalty for violation of a grave.

¹⁷⁰ Laum, *Stiftungen*, no. 102. Another from Magnesia is mentioned in no. 125.

¹⁷¹ *Inscript. Graecae*, 2nd Ed., ii, 2776; *Hermes*, 1871, 129.

¹⁷² IGRR., iii, 1056.

¹⁷³ IGRR., iii, 739. *Econ. Survey*, iv, 887 seems to miss the point when it says: "Opramoas made a gift of 500 dr. to change the federal coinage of Lycia, though in what way remains a question as the coinage was not changed."

¹⁷⁴ Dura, vi, 425.

¹⁷⁵ Prentice, *Gk. and Latin Inscr.*, 104; *Hermes*, 1902, 91, no. 5.

96 GOLD AND SILVER STANDARDS

It is interesting to note that a similar inscription from the same place some forty years earlier spoke of drachmae.

The mining regulations of Vipascum¹⁷⁶ mention denarii as the monetary unit. A wax tablet from Dacia¹⁷⁷ mentions twenty denarii, while a similar document from Ravenna¹⁷⁸ preserves a contract for the sale of an imported slave for 625 denarii. Aurei are mentioned¹⁷⁹ in a section of the Justinian Code.

TABLE S

HADRIAN AUREI

Grains	117/8	119/22	125/28	128/32	132/34	134/38	Sabina
98							
99							
100	1						
101							
102							
103		1				2	1
104						1	1
105	1	2		1		1	
106	1		1		1	4	5
107	1	2	1	3	2	8	1
108	1	9	7	4	2	15	7
109	7	18	8	2	1	24	7
110	12	23	13	5	5	34	9
111	14	32	33	10	2	42	2
112	1	26	10	5	2	25	7
113	8	13	6	3	1	21	5
114	1	3	5	1	1	15	2
115	3	3	1	1		8	
116			2	1		4	
117							1
118						2	

¹⁷⁶ CIL., ii, 5181.

¹⁷⁷ CIL., iii, p. 954 (A.D. 131).

¹⁷⁸ *Zeitsch. Savigny Stiftung*, xlii, 452 (Hadrian or Pius). Digest xxi, 1, 31, 21 provides that the nationality of the slave must be given in a sales contract.

¹⁷⁹ vii, 4, 2. *Vita Hadr.*, 7, 3 also mentions aurei. A Latin papyrus of A.D. 128 (Winter, *Misc. Papyri*, 166) mentions 375 sesterces.

ANTONINUS PIUS

While the 758 aurei of Pius and of the various members of his family show the same point of concentration as under Hadrian, namely 111 grains (7.19 grams), the accuracy in minting seems somewhat improved, for over 80% of the total number of coins fall within a range of 109 to 113 grains.¹⁸⁰

The average weight of 111 denarii found in various catalogues is 49.14 grains (3.19 grams).¹⁸¹ On this basis the ratio of gold to silver is 1 : 11.49. Sydenham gives the weights of ten didrachmae and of four drachmae from Caesarea that average 94.1 and 48.7 grains respectively.¹⁸²

Analyses of denarii show the following results: Hammer¹⁸³ gives one coin each with the following

¹⁸⁰ Hultsch (*Metrol.*, 306) says 7.27 to 7.21 grams.

¹⁸¹ Edwards (Yale Coll., 96) gives 3.17, 2.99, 3.48, 3.07, 3.7, 2.98, 3.27, 2.91, 3.2, 3.0, 3.03, 2.98, 2.9, 3.46, 2.92, 3.26, 3.35, 3.25, 3.24, 3.15, 2.82, 3.11 and for Faustina senior: 3.01, 3.09, 3.07, 2.81, 3.08, 3.22, 2.85, 3.15, 3.47; *Num. Zeit.* (1914, 228) gives 3.57, 3.24 and for Faustina: 3.31, 3.32; Cardoso gives 3.5, 3.5, 3.2, 3.2, 3.0, 3.0, 3.0, and for Faustina: 3.5, 2.7, 3.2, 3.0; Montelhet (*Musée Crozatier*, ii, 133) gives 3.45, 3.21, 3.02, 2.99, 2.92, 3.18, 3.48, 2.83, 2.39, 3.06, 3.27, 3.16, 3.33, 3.87, 3.28, 3.46, 3.38, 2.83, 3.02, 3.11, 3.15, 3.15, 2.95, 3.20, 3.25, 3.24, 2.73, 3.13, 3.21, 3.47, 2.87, 2.85, 3.43; Helbing Sale of Oct. 24, 1927, gives 3.3; *ibid.* Sale of Apr. 4, 1927, gives 3.5, 3.8, 3.3; Princeton Univ. has 2.90, 3.39, 3.30, 3.05, 2.64, 3.26, 3.47, 3.27, 2.91, and for Faustina: 3.12, 2.99, 3.67, 3.60, 3.3, 3.01, 3.06; Amer. Num. Soc. has 3.17, 3.54, 3.42, 3.05, 3.21, 3.55, 3.25, 3.42 and for Faustina: 3.40, 3.56, 3.34, 3.35; *Num. Chron.* (1931, 164) gives 53, 46.9, 54, 51.2, 51.6 grains. *Fundber. Schwaben* (1913, 86) gives 19 that average 3.146. BMC. (iv, xiv) gives 783 that average 3.23.

¹⁸² In addition Egger Sale 46 gives 5.81, 5.63, 6.78; Ratto Sale of Apr. 4, 1927, gives 5.74, 3.26.

¹⁸³ Hammer, 99.

98 GOLD AND SILVER STANDARDS

percentages of silver: 93.3, 81.3, 80.0, 78.3, 76.7, 74.8, 70.2 and of the coins of Faustina the Elder, one each with 92.4, 85.8, 81.3, 79.6, 77.3, 73.0%. On-drouch¹⁸⁴ gives one each with 81.4, 78.1, and 77.8% of silver.

An analysis of the weights of denarii given in the B. M. Catalogue and other sources shows the following results:

Grains	Pius	Faustina
36 and less	4	2
38	2	2
39	2	1
40	3	2
41	10	2
42	14	5
43	20	6
44	32	7
45	25	10
46	52	17
47	72	24
48	63	22
49	82	28
50	80	17
51	77	30
52	58	22
53	77	22
54	36	12
55	15	10
56	8	7
57	5	8
58	2	1
59	3	1
60 and over	<u>1</u>	<u>1</u>
Total	743	259

¹⁸⁴ *Vyskovce*, 11.

If there is a point of concentration here, it is somewhere between 53 and 49 grains. There seems to be no indication of two standards here but rather an *al marco* coinage at about 100 pieces to the pound.

A section of the Gnomon of the Idios Logos¹⁸⁵ prohibits the exchange of a gold or silver coin for more subsidiary copper coins than its legal value. While our copy of this document is dated A.D. 149, this particular section may be older. At any rate it presupposes a fixed ratio between the coins.

Various inscriptions speak of money. One of A.D. 141¹⁸⁶ mentions a gift of one denarius to each citizen; another, from Auximun,¹⁸⁷ of a gift of three denarii to each of the *decuriones* and of two denarii to each of the *augustales*. An inscription from Strongoli¹⁸⁸ mentions a capital gift of 100,000 sesterces, the income from which was to be distributed as denarii. Another¹⁸⁹ speaks of gifts of one to six denarii on various occasions. A papyrus of A.D. 151 mentions 350 denarii.¹⁹⁰ A Spanish inscription¹⁹¹ of A.D. 147 speaks of gifts of one denarius each to the inhabitants of Salpensa. One from Thyatira¹⁹² mentions 1500 denarii.

¹⁸⁵ Section 106. The word *nomisma* which is used means silver certainly and gold probably.

¹⁸⁶ CIL., xiv. 8 of Ostia.

¹⁸⁷ CIL., ix. 5823 (A.D. 159); also xiv. 4554 (A.D. 166).

¹⁸⁸ Dessau, 6468. CIL., xiv. 353 is similar in its use of sesterces for the capital and denarii for the interest though here part of the money is given to guilds and not to individuals. See also xiv. 4642.

¹⁸⁹ CIL., vi. 10234 (A.D. 153).

¹⁹⁰ BGU., 887 as the price of a slave.

¹⁹¹ CIL., ii. 1282.

¹⁹² IGRR., iv. 1291. Denarii are also mentioned, *ibid.*, iii. 1010 from Kara.

Two of the Dacian wax tablets seem to give a relationship between gold and the denarius. One, dated May 6, 142,¹⁹³ seems to equate two ounces with 600 denarii; the other, dated October 4, 160,¹⁹⁴ seems to equate two ounces with 420 denarii. It does not seem possible, however, to assume that the expression "pro uncis duabus" that is found on both tablets actually refers to gold.¹⁹⁵ Unfortunately this expression is not used similarly in any other place, but in spite of this lack, it seems much more likely that it refers to some import tax on slaves, and that it has no connection at all with the denarii that are mentioned immediately after.

There are two other contemporary tablets which are not in reasonable accord with any extremely low valuation of the denarius at this time; one records¹⁹⁶ the sale of one-half of a house for 300 denarii, the other¹⁹⁷ records a list of expenditures where fractions of a denarius are mentioned. Lucian¹⁹⁸ tells a story of a trusting buyer who paid thirty gold pieces for a forged rare book priced at 750 drachmae. Basing his

¹⁹³ CIL., iii, p. 940.

¹⁹⁴ CIL., iii, p. 959.

¹⁹⁵ Appleton in *Studi in onore do V. Scialoja* (not accessible to me) says that the two ounces do not refer to gold but equals one sestertertium or four asses. The editors of the CIL say that the two ounces on p. 959 equal 166 $\frac{2}{3}$ denarii which is a mathematical error. There is another contract for the sale of a slave on p. 936, dated March 17, 139 which makes no mention of this phrase: "pro uncis duabus."

¹⁹⁶ CIL., iii, p. 944 dated A.D. 159.

¹⁹⁷ CIL., iii, p. 953. Documents on pp. 948, 950 (A.D. 163, 164 and 167) also speak of denarii and one speaks of 5 sesterces as a daily wage.

¹⁹⁸ *Pseudologists*, 30.

TABLE T
 ANTONINUS PIUS AUREI

Grs.	138/9	139/41	140/3	143/4	145/6	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	no	date
96																					1	
97																					1	
98			1											1								
99																						
100			1					2			1											1
101																						1
102																						
103					1																	
104																						
105	2	1			1											1					1	
106	1		1	1			1														2	
107	3		4				2			1											3	
108	3	2		1	2																16	
109	3			3	12									1		2					3	
110	3	1	4	1	8			4	4		2	1			4						29	
111	10	3	15		16			3	3	8	8	2	3	2	3	3	2	3	1		29	
112	3	1	9		10			1	7	15	18	14	9	3	9	9	5	10	15	1	80	
113	2	1	7					2	2	11	6	1	8	4	2	5	7	6	10	5	46	
114	2				5			2			5	1	4	2	2	1	2				33	
115			3	1	4						3	1			2	2					14	
116			2		2			3	1						1						2	
117	2		1		1						1										2	
118																					1	
119																						
120																						

calculation on the fact that the denarius contained only 70% silver, Kubitschek¹⁹⁹ obtains a ratio between gold and silver of 1 : 8.2 from this story. If he had disregarded the amount of alloy he would have found a ratio of about 1 : 10.75. This is to be compared with the ratio of 1 : 11.49 obtained from the weights given in the present paper.

MARCUS AURELIUS

The 578 aurei of Marcus Aurelius and of the various members of his family show a point of concentration at 111 grains (7.19 grams). The coins display an exceptional quality of technical skill in minting, for over 95% fall within a range of 109 to 113 grains.²⁰⁰

The average weight of 100 denarii that appeared in catalogues and elsewhere before the publication of Vol. 4 of the British Museum Catalogue is 49.38 grains (3.20 grams).²⁰¹ Using these figures as a basis, the ratio of gold to silver is 1 : 11.12.

¹⁹⁹ *Quinquennium*, 103.

²⁰⁰ Hultsch (*Metrol.*, 306) says 7.25 grams from Aurelius to Septimius. The figure of 95% is due largely to the fine condition of coins in the particular hoards that furnish the bulk of our information.

²⁰¹ Edwards (Yale Coll., 99) gives 3.67, 3.3, 2.98, 2.75, 3.48, 3.38, 3.07, 3.18, 2.81, 3.05, 2.68, 3.71, 3.45, 2.83, and for Faustina junior: 3.2, 3.28, 3.44, 3.35, 3.33, 2.8, 3.01, and for L. Verus: 2.88, 3.38, for Lucilla: 2.99, 3.17, 3.07, 2.74, 3.41; *Num. Zeit.* (1914, 228) gives 3.20, 2.83, 3.20 for Faustina; 2.85, 2.63 for Verus; and 3.44, 3.24 for Marcus; Cardoso (*Buenos Aires*, 183) gives 3.0 for Marcus as Caesar; 3.5, 3.2, 3.0, 3.0 as emperor; 3.0, 3.2, 3.7, 3.2, 3.2 for Faustina. Montelhet (*Musée Crozatier*, ii) gives 3.48, 2.89, 2.57, 3.68, 3.12, 2.63, 3.30, 3.32, 3.44, 3.22, 3.30, 3.19, 3.02, 2.86, 3.37, 2.89, 3.49, 3.03, 3.02, 2.62; Naville Sale 2 gives 3.21; Helbing Sale

Grains	Marcus	Faustina	Lucilla
36	3	1	
37	5		
38	3	1	
39	5	1	2
40	9	4	
41	3	2	1
42	12	3	2
43	26	7	3
44	37	6	1
45	18	5	3
46	43	7	5
47	32	10	5
48	50	6	4
49	67	19	3
50	56	17	3
51	76	18	5
52	68	18	8
53	52	11	5
54	32	3	4
55	9	2	1
56	16	4	
57	10	1	1
59			1
60	2		
over 60	2	1	
Total	636	147	57

of Apr. 12, 1927, gives 3.9, 3.5, 3.6, 3.4; Helbing Sale of Oct. 24, 1927, gives 3.2; Princeton Univ. has 3.14, 3.12, 3.29, 3.40, 3.39, 2.90, 3.38, 3.43, 2.91, 3.51; and for Faustina: 2.94, 2.86, 3.16, 3.47, 3.23, and for Verus: 3.17, 3.65, 3.29; Amer. Num. Soc. has 3.37, 3.36; of Faustina: 3.39, 2.91, 3.34, 3.45, 3.27, 3.31, 3.41, of Verus: 3.39, 3.32, of Lucilla: 3.41; *Viestnika Hrv. Arheol. Društva* (1900, 6) gives 2.67; *Fundber. Schwaben* (1913, 86) gives an average of 3.09 for ten, and of 3.05 for four of Faustina; BMC. (iv, xiv) gives 3.21 (49.58 grains) as the average of 639; *Num. Chron.* (1931, 164) gives 46.4, 50.5, 42.5, 51.3 and for Commodus 45, 57.6, 44.6, 34.4 grains.

104 GOLD AND SILVER STANDARDS

Using the weights given in the B. M. Catalogue and other sources a frequency table shows the results in table on p. 103. In the column headed Marcus appear denarii issued in the name of L. Verus and of Commodus as Caesar.

This also looks like *al marco* coinage at about 100 to the pound. Using 51 grains as the point of concentration, the ratio of gold to silver is 1 : 11.49.

The British Museum Catalogue gives the weight of one Syrian tetradrachm as 197.8 grains, while Sydenham gives the weights of thirty-two didrachmae and of one tridrachma from Caesarea that average 100.1 and 153.3 grains respectively.²⁰²

In Persia 143 tetradrachms and 26 drachmae issued by Volagases III (A.D. 147/191) average 12.36 and 3.45 grams respectively.²⁰³

Hammer²⁰⁴ gives an analysis of ten coins of Marcus, one with 93.6, and nine with 74.5% of silver. Two coins of Faustina the Younger have 72.1 and one has 70.5% of silver.

The analysis of silver hoards buried up to the time of Alexander Severus (see Table Q) seems to make clear that Marcus made no consistent effort, if indeed he made any, to call in older coins that

²⁰² In addition Egger Sale 46 gives 6.68, 6.24, 5.48, 6.06; Ratto Sale of Apr. 4, 1927, gives 6.86, 6.35, 6.09, 7.02; Ciani Sale, 1925 gives 5.85.

²⁰³ BMC.; Naville Sale 12; Prokesch-Osten, *op. cit.*; Markoff, *op. cit.*; *Rev. Num.*, 1898.

²⁰⁴ Hammer, 99. *Klio*, xxvi, 97; Mickwitz, *Geld*, 33; and Mattingly, *Roman Coins*, 125, all assume a 25% debasement. There is a sudden large debasement about the middle of the reign in the Alexandrian coinage, but this was not continued throughout the reign or in the succeeding reigns.

might be better than his own. It is clear, however, that the silver coinage suffered a depreciation of over 6% during the reign, due perhaps to extraordinary demands made on the government because of earthquakes, pestilence and war. It is said to be the first depreciation of the coinage made to help the government at the expense of its citizens.²⁰⁵ Whether this idea is right or not depends upon the answer to an apparently unanswerable question—whether the government was still willing to exchange twenty-five denarii for an aureus. If it still did so, then the government saved in its cost of minting silver and no one was hurt financially at the time by the move. If the government was unwilling to make that exchange, then the added amount of debasement was equivalent to a capital levy.

It has been said²⁰⁶ that after Marcus Aurelius the Empire rapidly grew poorer and that the mint ceased to coin gold with any freedom. While the first statement may be true, the second does not rest upon a sufficient basis of fact, for the numismatic evidence shows no great diminution in the issues of gold under the succeeding emperors.

There are numerous contemporary references to the denarius. At Bovillae²⁰⁷ a gift was made to the *adlecti scaenicorum* of twenty-five denarii, to the *decuriones* of five denarii, to the *augustales* of three denarii, and to the citizens generally of one denarius.

²⁰⁵ Mickwitz, *Geld*, 33.

²⁰⁶ *Num. Chron.*, 1916, 43.

²⁰⁷ CIL., xiv, 2408 (A.D. 169).

At Gabii²⁰⁸ a principal sum of 10,000 denarii was given, the interest from which was to provide an annual banquet. Among the Dacian wax tablets²⁰⁹ is one recording a loan of 60 denarii. In a decree²¹⁰ for reducing the cost of gladiatorial shows there is mention of aurei and of sesterces but no relation between them is shown.

An inscription from Tira²¹¹ mentions 250 "silver denarii," while at Amasia²¹² 10,000 denarii are specified as a fine for violation of a grave. A military account from Egypt, dated about A.D. 180, shows denarii, obols and semisses, with the denarius equal to twenty-eight obols.²¹³

In a second Spanish inscription²¹⁴ a gift of 7500 denarii is mentioned; this was to be loaned at six percent, and the income was to provide 250 denarii for a spectacle and 200 denarii for oil. An inscription from Volcii²¹⁵ records a gift of three denarii to the *decuriones*, two to the *augustales*, and one to the general populace. A large endowment from El Kef²¹⁶ mentions a capital sum of 1,300,000 sesterces, whose income, amounting to 16,250 denarii (a rate of 5%), was to be used in the education of boys and girls.

²⁰⁸ CIL., xiv, 2795 (A.D. 168).

²⁰⁹ CIL., iii, p. 934 (Oct. 20, 162).

²¹⁰ CIL., ii, 6278 from Italica.

²¹¹ IGRR., iv, 1662 (A.D. 175). An endowment at Gythium is given in denarii: Laum, *op. cit.*, no. 9.

²¹² IG., iii, 104. In *ibid.*, iv, 803 from Apamea 500 denarii are mentioned as the penalty.

²¹³ *Fayum Towns*, 105.

²¹⁴ CIL., ii, 4514 from Barcino.

²¹⁵ CIL., x, 416 probably of this period.

²¹⁶ CIL., viii, 1641.

TABLE U
MARCUS AURELIUS AUREI
Faust.
Lucilla Jun.

Grains	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
98																				
99																				
100																				
101																				
102																				
103																				
104																				
105																				
106																				
107																				
108																				
109																				
110																				
111																				
112																				
113																				
114																				
115																				
116																				
117																				
118																				

A papyrus of A.D. 166 mentions the sale of a slave for 200 denarii.²¹⁷ Three of the Dacian wax tablets²¹⁸ mention denarii, while one mentions a daily wage of five sesterces. In an inscription from Stobi,²¹⁹ twenty-five myriads of denarii are mentioned, an amazing figure if the inscription is correctly dated.

A document from Dura²²⁰ dated A.D. 180 mentions 500 silver drachmae of the Tyrian standard. An inscription from Iobacchi²²¹ mentions sums of 25 and 50 denarii, while one from Eumeneia mentions²²² 3712 drachmae. A section of the Digest²²³ gives the hypothetical value of a slave as ten aurei, which is two aurei higher than the actual price given above. The well-known letter written by the Tyrians in Puteoli in A.D. 174 mentions 250 denarii.²²⁴ Aurei are mentioned by Dio Cassius.²²⁵

COMMODUS

The comparatively few aurei that may be dated to the sole reign of Commodus, seventy-nine in

²¹⁷ PBM., 229; Meyer, *Jur. Pap.*, 37. In addition to the 200 denarii there was a "capitulario portitorio" to be paid. Perhaps this is to be considered the same as the "pro uncis duabus" found on Dacian wax tablets under Pius. Grenfell, *New Class. Frag.*, ii, 108 (a Latin document) mentions denarii.

²¹⁸ CIL., iii, pp. 948, 950 (A.D. 163, 164 and 167).

²¹⁹ Frey, *Corp. Inscr. Judaicarum*, 694 and said to be dated in A.D. 165.

²²⁰ Dura, vi, 429.

²²¹ Dittenberger, IGS., 1109 (before A.D. 178).

²²² *Mon. As. Min. Antiq.*, iv, 333 (A.D. 173).

²²³ xxi, 2, 21. *Vita Marci*, ii, 4 also mentions aurei.

²²⁴ IG., xiv, 830.

²²⁵ Dio, lxxi, 32, 1.

number, show a point of concentration at 112 grains (7.26 grams), and a quality of workmanship nearly equal to that found under Marcus, for 90% of the coins fall within a range of 110 to 114 grains.

The average weight of 325 denarii is 44.89 grains

Grains	Commodus	Crispina
36 or less	25	
37	14	
38	4	
39	11	1
40	16	
41	21	1
42	23	
43	13	4
44	24	5
45	25	1
46	13	3
47	11	1
48	15	1
49	11	4
50	14	3
51	14	1
52	11	2
53	9	
54	11	2
55	2	1
56	3	
57	1	
58	1	
59	2	
60		
61 and more	<u>1</u>	<u> </u>
Total	295	30

(2.91 grams).²²⁶ Results are given in a frequency table on p. 109.

The badly defined point of concentration here is at 45 grains, but as before, one can perhaps assume *al marco* coinage at about 100 to the pound.

The British Museum Catalogue gives the weights of two Syrian tetradrachms as 136.6 and 192 grains,²²⁷ while Sydenham gives the weights of thirteen didrachms and two tridrachms of Caesarea that average 70.1 and 139.9 grains respectively.²²⁸

Hammer gives an analysis of ten coins: five with 72, four with 71 and one with 67.1% of silver. These figures indicate a further depreciation from the time of Marcus of between 5 and 6%.

The increase in the weight of the aureus and the pronounced and apparently temporary decrease in the weight of the denarius (provided it is not due to the small number of coins for which weights could be found) indicates either a change in the ratio of gold to silver, or a revaluation of the denarius in terms of the aureus. If one assumes that

²²⁶ Edwards (Yale Coll., 102) gives 3.33, 2.45, 2.34, 2.64 and for Crispina 3.01; *Num. Zeit.* (1914, 228) gives 2.29 and for Crispina 2.83; Montelhet (*Musée Crozatier*, ii, 192) gives 2.80, 2.90, 2.59, 2.72, 3.35, 2.78, 2.72, 2.32, 3.13, 2.55, 2.45; Helbing Sale of Oct. 24, 1927, gives 3.2; Princeton Univ. has 2.92, 2.97, 2.64, 2.10, 2.43, 2.86, 3.29, 2.73 and for Crispina 3.28, 2.87; Amer. Num. Soc. has 3.23 and for Crispina 3.50, 3.38. *Fundber. Schwaben* (1913, 86) gives 13 that average 2.663; BMC (iv, xiv) gives 290 that average 45.22 grains (2.93 grams); *Viestnika Hrv. Arheol. Društva* (1900, 10) gives one at 2.83.

²²⁷ Hunter Coll. gives 173.4.

²²⁸ In addition Egger Sale 46 gives 6.32. Some of the weights given by Sydenham indicate tetradrachms rather than "tridrachms" as stated.

the old ratio of 25 denarii to one aureus still held good, then the ratio of gold to silver is 1 : 10.02. If however, one assumes that Commodus revalued the denarius by making an aureus worth 30 denarii, then the ratio of gold to silver is 1 : 12.02, approximately what it had been at the beginning of the imperial period.

Apuleius²²⁹ whose writings may perhaps be dated to this period, mentions sesterces, denarii and aurei, in one place pricing donkeys at 11 and 17 denarii, low prices for average animals. He also uses two curious expressions "aureos solidos" and "aureos folles" which elsewhere are not known before the fourth century. Are these interpolations in the text? If so, they seem to have been unnoted by the commentators.

Among other contemporary references to money may be mentioned an inscription from Ostia²³⁰ recording not only a capital gift which is stated in sesterces but also a sportula of five denarii each to the *decuriones* and to the *augustales*. There are two inscriptions²³¹ from Anagnia reporting separate identical gifts of five denarii to the *decuriones*, two to the *sevirs* and one to the citizens generally, at the dedication of the baths.

An inscription from Sagalassus²³² records a gift of 13,000 denarii, while at Oenoanda 10,000 denarii

²²⁹ *Metam.*, ii, 13; iv, 9; ix, 18; *Apol.*, 42, 97.

²³⁰ CIL., xiv, 367 (A.D. 182). CIL., viii, 6948 from Cirta also mentions capital in sesterces and income in denarii.

²³¹ CIL., x, 5917, 5918.

²³² IGRR, iii, 351. An endowment at Aphrodisias had a capital of 12600 denarii: Laum, *op. cit.*, no. 101.

112 GOLD AND SILVER STANDARDS

are mentioned as the penalty for violation of a grave.²³³ An African inscription²³⁴ estimates the value of a slave as 500 denarii. A contemporary papyrus mentions denarii,²³⁵ while another speaks of two denarii, eight obols.²³⁶

The mention of such sums as 1, 2 and 5 denarii seems conclusive evidence that marketwise this coin still had real purchasing power.

TABLE V
COMMODUS AUREI

Grains	Commodus	Crispina
97		1
98		
99		
100		
101		
102		
103		
104		
105		
106		
107		1
108	1	1
109	4	
110	5	2
111	17	7
112	20	5
113	9	6
114	1	

PERTINAX

The forty-three aurei of Pertinax show a point of concentration at 111 grains (7.19 grams) with 93%

²³³ IGRR., iii, 500.

²³⁴ CIL., viii, 23958, 14.

²³⁵ P. Princeton, 27 (A.D. 191/192).

²³⁶ Wilcken, *Gk. Ost.*, 1265 (A.D. 187).

of the coins falling within a range of 109 to 113 grains. In very few places are weights given for the denarius. The few that have been found indicate an average of 48.14 grains (3.12 grams).²³⁷

Hammer²³⁸ gives an analysis of two silver coins, one each with 90 and 62% of silver.

DIDIUS JULIANUS

The seventeen coins of this reign show a decided drop in weights. The point of concentration is found at 103 grains (6.67 grams), with 82% of the coins falling within a range of 101 to 105 grains.

TABLE W
PERTINAX AND JULIANUS AUREI

Grains	Pertinax	Julianus
91		1
101		1
102		2
103		7
104		2
105		2
106		2
107		
108	2	
109	3	
110	8	
111	15	
112	13	
113	1	
114	1	

²³⁷ Edwards (Yale Coll., 103) gives 3.19, 3.08; Naville Sale 2 gives 3.36, 3.07, 3.17, 3.40, 2.61, 3.02; Helbing Sale of Oct. 24, 1927, gives 2.75, 3.05, 2.6; Princeton Univ. has 3.64; Amer. Num. Soc. has 3.60.

²³⁸ Hammer, 100.

114 GOLD AND SILVER STANDARDS

Judging from very few examples the average weight of the denarius²³⁹ is 44.18 grains (2.86 grams). Hammer gives the analysis of one denarius with 81% of silver.

Judging from the coins, and assuming that an aureus was worth 25 denarii, the ratio between gold and silver is practically the same for the two reigns. Under Pertinax it is 1 : 10.84 while under Didius it is 1 : 10.72.

SEPTIMIUS SEVERUS

The 523 aurei issued by Septimius for himself and in the names of various members of his family show a point of concentration at 111 grains (7.19 grams). Over 75% of the coins fall within a range of 109 to 113 grains.²⁴⁰ The average weight of the denarius, to judge from 257 coins, is 48.39 grains (3.14 grams).²⁴¹ The average weight of fifty-four denarii of Septimius found at Müttersholz²⁴² is given as 3.2 grams, of thirty denarii of Julia Domna as 3.38 grams, and of fourteen denarii of Geta as 3.6 grams. Weights of the denarii of Septimius, as far as they

²³⁹ Naville Sale 2 has 2.56, 2.84, 2.75, 3.19; Amer. Num. Soc. has 3.02, 2.82.

²⁴⁰ See *Num. Zeit.*, 1933, 17 for coinages of Septimius, Caracalla, Geta and Macrinus. Despaux, *Les dévaluations monétaires* says Septimius reduced the aureus from 7.40 to 7.28 grams.

²⁴¹ The table includes coins from Edwards, Yale Coll., 104; *Num. Zeit.*, 1914, 228; *Viest. Hrs. Arheol. Drustva*, 1900, 6f; Naville, Sale 17; Helbing, Sale of Oct. 24, 1927; Princeton Univ.; Amer. Num. Soc.; *Num. Chron.*, 1931, 164, 1939, 42; B.J., 111/112, 419. *Fundber. Schwaben* (1913, 86) gives 107 that average 3.01 and 10 of Geta that average 2.90.

²⁴² *Bull. Soc. pour conserv. Mon. Histor. d'Alsace*, 1926, 129.

are available, may be shown in tabular form as follows:

Weight in grains	Number	Weight in grains	Number
39 or less	12	50	21
40	3	51	29
41	5	52	20
42	2	53	24
43	4	54	12
44	10	55	12
45	10	56	11
46	12	57	5
47	21	58	6
48	21	59	3
49	19	60 or more	2

A very unsatisfactory point of concentration is indicated at 51 grains.

Hammer²⁴³ gives analyses of twelve denarii, two with 75.5, one each with 73.1, 56.9, 56.9, 56.8, three with 55.7, and one each with 54.9, 48.7, 47.4, 43.1% of silver. One coin of Julia Domna shows 45.5% of silver. The average silver content of 57.3% is somewhat better than the 50% of alloy which Septimius is commonly credited with putting in his denarius.²⁴⁴

The British Museum Catalogue gives the weights of seven Syrian tetradrachms of Septimius that

²⁴³ Hammer, 102.

²⁴⁴ *Camb. Anc. Hist.*, xii, 27, 221. These figures seem to be taken to indicate a general debasement of about 50% as in *Klio*, xxvi, 97, Mickwitz, *Geld*, 33, though Mattingly, *Roman Coins*, 125, says about 40% debasement.

average 199.2 grains, and that show a high of 225.3 and a low of 183.7 grains.²⁴⁵ Twenty-one tetradrachms of Caracalla, struck during his father's lifetime, have an average of 200.2 grains with a high of 227 and a low of 154.4 grains. The combined average is 199.96 grains.²⁴⁶

Sydenham²⁴⁷ gives the weights of forty-seven drachmae and of six tridrachmae of Caesarea that average 46.3 and 141.7 grains respectively.

In Persia the average weight of 42 tetradrachms and 14 drachmae struck by Volagases IV (A.D. 191/208) is 11.75 and 3.59 grams respectively.²⁴⁸

Using the actual weights of the aureus and of the denarius, the ratio of gold to silver is 1 : 10.90. As before, this figure is obtained by assuming that an aureus was still worth 25 denarii.

After the time of Septimius, when good denarii²⁴⁹ were difficult to obtain, the free Germans who had been heavy users of Roman silver turned to gold and the increase in the number of gold coins in German hoards of the third century is very noticeable.

After the revolutions that marked his accession, Septimius did not immediately return to a system

²⁴⁵ Hunter Coll. gives 219.7 and for Geta 201.8, 225.5 grains; Naville Sale 17 gives 13.26; Ratto Sale of Apr. 4, 1927, gives 14.12, 9.71; Ciani Sale 1925 gives 12.05, 13.95 grams; *Num. Chron.* (1931, 160) gives 215.2, 204.9, 189, 196.8, 230.3, 215.1, 202.7, 224.8, 221.1, 209.4, 183.6, 218, 221, 216.3, 204.9 grains.

²⁴⁶ These weights are not repeated.

²⁴⁷ In addition Egger Sale 46 gives 2.58, 3.07; Ciani Sale 1925 gives 8.85; Windisch-Graetz gives 3.46; Hamburger Sale 96 gives 2.47.

²⁴⁸ BMC.; Naville Sale 12; Prokech-Osten.

²⁴⁹ *Bull. Correspond. Hell.*, 1896, 523 says the denarius now was only a fiduciary coin.

of centralized coinage, as Vespasian had done in similar circumstances. For example, Septimius had opened a mint for gold at Antioch or Laodicea, and this was not closed until at least A.D. 202.

About A.D. 210 Septimius issued a decree²⁵⁰ proclaiming serious penalties for illicit exchange at Mylasa. Two extracts from this edict may be given: “. . . Decreed by the council and assembly: whosoever, be he freedman or slave, with the exception of the leaseholder and manager of the bank, shall be caught in any way selling or buying currency shall be brought before the banker, after an accusation has been made before the council by any citizen that wishes. If he is convicted before the magistrates and council, but has done it without charging a commission for exchange, the banker and the informer who secured the conviction shall have the right to exact the money from him, the banker having also the right to make exactions from him according to the guarantees (in his lease). If, however, he has charged a commission, a freeman shall pay the most sacred treasury of our most divine lords, the emperors, 500 denarii, the assembly 250 denarii, and the informer who secured the conviction 100 denarii, and the money which he shall be found to have exacted shall be confiscated for the benefit of the banker. . . . In very truth, the security of the city is shaken by the malice and villainy of a few people who assail it and rob the community. Through them speculation in exchange has entered the market place and prevents the city

²⁵⁰ *Ibid.*

from securing a supply of the necessities of life so that many of the citizens and indeed the community as a whole suffer from scarcity. And on this account also the regular payment of the taxes to the emperors is delayed." The edict was an attempt to protect the lessees of the bank from losses due to illegal exchange by others. Notwithstanding Reinach and Dittenberger it is not clear that the debasement of the silver currency was the primary reason for the difficulties that the edict sought to correct.

Another document that is sometimes quoted to indicate contemporary distrust of the denarius is one from Palmyra dated A.D. 193²⁵¹ which mentions "old Roman aurei." These coins were carried by a caravan to be used in meeting travelling expenses. Under such conditions gold would be vastly more convenient, due to its smaller bulk and weight. In view of this it seems unlikely that any distrust of the subsidiary coinage can properly be inferred from this document.

On the other hand, there are numerous indications that the denarius was still a coin of real value. An inscription from Perusia²⁵² records a gift of two denarii to the *decuriones* and of one to the *plebs*; another from Rome²⁵³ a gift of two denarii each to fellow members of the donor's guild; another, from Verulae,²⁵⁴ speaks of gifts of four and three denarii

²⁵¹ IGRR., iii, 1050; *Corp. Inscr. Semit.*, 3948. *Vita Severi*, 6.4 also mentions aurei.

²⁵² CIL., xi, 1926 (A.D. 205).

²⁵³ CIL., vi, 85 (A.D. 198).

²⁵⁴ CIL., x, 5796 (A.D. 197). CIL., x, 5064 from Atina (A.D. 208) mentions gifts of 12 sesterces to the *decuriones* and six to the

to various officials and of one denarius to the people. A story in Eusebius²⁵⁵ mentions a monthly wage of 150 denarii. An endowment at Bitburg is said to have had a capital of 50 denarii, possibly a stone cutter's error for 50,000.

A papyrus of A.D. 194 shows that an initiation fee of 100 denarii was paid on joining a well-known athletic association.²⁵⁶ An inscription from Ormela²⁵⁷ mentions both Attic drachmae and the denarius but gives no relationship between them. The Tariff of Zrai,²⁵⁸ dated A.D. 202, gives rates in either asses, sesterces or denarii, and in these rates there is no indication of any depreciation of value for any of these coins. A papyrus of A.D. 197 shows that a fine levied as 250 denarii was paid with 1000 drachmae.²⁵⁹ The papyrus, however, does not show any relationship between gold and silver. An ostraca dated A.D. 205²⁶⁰ mentions seven denarii. Both the *Scriptores Historiae Augustae* and Dio Cassius²⁶¹ mention aurei.

citizens. CIL., xi, 6014 from Sestinum mentions gifts of three denarii to the decuriones and two denarii to the seviri and people generally. See also xiv, 325 add.

²⁵⁵ Eusebius, *Hist. Eccl.*, v, 28, 10.

²⁵⁶ PBM., 1178.

²⁵⁷ IGRR., iv, 887. *Ibid.*, 1282 from Thyatira mentions 2500 denarii, while *ibid.*, iii, 1480 from Iconium mentions 1000 denarii as does *ibid.*, iv, 629 from Traianopolis. *Ibid.*, iv, 758 from Dionysopolis (A.D. 208/9) mentions 2500 denarii.

²⁵⁸ CIL., viii, 4508.

²⁵⁹ P. Achmin, 8.

²⁶⁰ Wilcken, *Gk. Ost.*, 1128.

²⁶¹ *Vita Severi*, 6, 1; Dio, lxxvi, 1.

TABLE X
SEPTIMIUS SEVERUS AUREI

Grains	Rome 193	East 193	193/6	Laodicea 196/202	Julia 196/211	197	198/202	Antioch 198/201	202/210
100			1						1
101									
102			1			1			
103									
104		1			1				1
105							1		1
106						1	4		2
107		1	1				5		5
108			3	3			12		8
109	1	1	2	5	2		24		10
110	2	4	6	1	5	1	33		30
111	1	1	18	4	6	8	51	1	43
112		3	12	2	2	4	33		21
113	2	1	3	2	3	3	29		15
114	1		2		4	3	19		15
115	1						12		4
116					1		4		4
117					1				1
118									2

CARACALLA

The monetary questions connected with this reign are made more difficult of solution because of the small number of coins that may be assigned to the period after the death of Septimius. For the period before A.D. 215, fifty-eight aurei show a point of concentration at 112 grains (7.26 grams), with only 65% falling within a range of 110 to 114 grains. For the period after A.D. 215, twenty-one coins show a point of concentration at 100 grains (6.48 grams), but with only 57% of the coins falling within a range of 98 to 102 grains.

This pronounced change in weights seems successfully to contradict the idea²⁶² that Caracalla did not introduce a new gold standard, and that there was no general reduction in the weight of the aureus. The carelessness of the coinage, however, makes the validity of any deductions less certain than they should be.

The great innovation of Caracalla was the introduction of the coin called, for lack of a better name, the antoninianus, and perhaps intended to replace the denarius.²⁶³ It has been suggested that the antoninianus was rated as one and one-quarter, one and one-half, and two times the denarius,²⁶⁴ though its weight seems to have been fixed at one and one-half times the weight of the denarius. This gives a theoretical weight for the antoninianus of 5.11 grams (79 grains). The actual weights of thirty-

²⁶² *Num. Chron.*, 1916, 41.

²⁶³ Mickwitz, *Geld*, 33.

²⁶⁴ Bernhart, *Handbuch*, 21.

two antoniniani issued under Caracalla are given in the notes. The average is 77.30 grains (5.01 grams). Of these coins, twelve weigh more than the theoretical weight, the heaviest weighing 5.72 grams; and this is a coin in perfect condition. The silver content is said to have been 55%²⁶⁵ or 50%²⁶⁶. Outside of the *Scriptores Historiae Augustae* there is no mention of this coin in literature, in papyri or in inscriptions. In view of the fact that the coin was struck in vast numbers over a long period of time, this is a very curious fact.

Hammer gives analyses of seven coins struck by Caracalla; five (including two antoniniani) have 62.3% of silver, one has 54 and one antoninianus has 52% of silver.²⁶⁷ The three antoniniani therefore average 58.9% of silver, while the four denarii average 60.2%. This difference is too small to have any significance.

The average weight of nineteen denarii dated between A.D. 211 and 215 is 49.4 grains (3.20 grams), and of thirteen denarii dated after A.D. 215 is 48.9 grains (3.17 grams),²⁶⁸ a difference that again is too

²⁶⁵ *Num. Chron.*, 1919, 134.

²⁶⁶ Giesecke, *Antikes Geldwesen*, 170.

²⁶⁷ Hammer, 102.

²⁶⁸ Edwards (Yale Coll.) gives 2.52, 3.99, 3.15, 2.86, 2.99, 4.12, 2.87, 3.13, 4.83, 3.09, 3.0, 3.43, 2.65, and for Plautilla: 2.95, 3.24; *Num. Zeit.* (1914, 228) gives 3.01, 2.95, 3.09, 2.75, 2.88 and for Plautilla: 2.40, 3.09; *Num. Chron.*, (1939, 42) gives 49.6 grains; Naville Sale 2 gives 2.91, 3.55, 3.35, 2.63, 3.01 for before A.D. 215 and 3.55 after A.D. 215. Naville Sale 17 gives for the period after 215: 2.55, 2.90, and for Plautilla 3.54, 3.13, 3.22, 3.44, 3.88; Princeton Univ. has 3.74, 2.57, 3.11 and for antoniniani: 5.06, 5.23; for Plautilla; 3.51, 3.86, 3.20; Amer. Num. Soc. has for antoniniani: 5.17, 5.18, 5.17, 4.70, 5.26, 5.15, 5.08; E. T. Newell has 5.11, 5.12,

small to have significance. Sydenham²⁶⁹ gives the weights of four drachmae and of four didrachmae of Caesarea that average 48.3 and 85.1 grains respectively. The Syrian tetradrachm seems to have an average weight of 203.2 grains.²⁷⁰

The relation of the aureus to the subsidiary coins after A.D. 215 has been the subject of much dispute. Various suggestions have been made, among them:

- 1 aureus = 15 antoniniani = 30 denarii
- 1 aureus = 20 antoniniani = 30 denarii²⁷¹
- 1 aureus = 12½ antoniniani = 25 minutuli²⁷²

In view of the fact that there seems to be no appreciable difference in silver content between the two coins, it would seem that the relative weights of the antoninianus and of the denarius would have determined the relative monetary value of the two

4.92, 4.51, 4.95, 4.96, 5.17, 4.60, 4.80, 4.86, 5.05, 5.25, 4.87, 4.92, 5.30, 4.85, 5.48, 4.45, 5.72, 5.12, 4.53, 4.79. For denarii issued between 211/215 the Amer. Num. Soc. has 3.05, 3.40, 3.55, 3.16, 2.97, 3.04, 3.39, 2.96, 3.41, 2.99, 2.70, 3.86, 3.28, 3.59 and after 215: 3.19, 2.96, 3.55, 3.25, 3.60, 3.46, 2.82, 3.17, 3.41, 3.12 and for Plautilla: 2.72, 3.37, 3.36, 3.48, 3.41. Naville Sale 17 gives an antoninianus as 4.94; *Bull. soc. pour Cons. mon. hist. d'Alsace* (1926, 129) gives the average of 31 undated coins as 3.07 grams.

²⁶⁹ In addition Windisch-Graetz gives 2.85; Ratto Sale of Apr. 4, 1927, gives 2.96.

²⁷⁰ Egger Sale 46 gives 13.43, 11.95 grams; Hunter Coll. gives 220.9, 213.3, 197.5 grains; Ciani Sale 1925 gives 15.90, 11.30, 13.30, 12.0, 15.80; Ratto Sale of Apr. 4, 1927, gives 15.93, 13.67, 12.44, 11.52, 12.10, 11.28, 12.25, 11.90; Dieudonne gives 15.20, 13.75, 11.60.

²⁷¹ Mattingly-Sydenham, *RIC.*, v, i, 6; Mickwitz, *Geld*, 33.

²⁷² Giesecke *op. cit.*, 170. There seems insufficient evidence to equate the minutulus and the denarius. The former seems to be first mentioned in connection with Alexander Severus.

coins. In other words $1\frac{1}{2}$ denarii were worth one antoninianus. It is difficult to see why one or the other coin would not have gone into the melting pot if a different relationship had been attempted. There is, of course, the possibility that the government might have given some special legal rights to the antoninianus about which we have no extant information, but it is difficult to see where it would profit under those circumstances.

It is interesting to note that in A.D. 215 the temple at Arsinoe²⁷³ was making mortgage loans carrying six percent interest and with the provision that interest payments were to be made in silver. Dio Cassius²⁷⁴ mentions aurei and a contemporary section of the Digest²⁷⁵ gives five aurei as the hypothetical value of a slave. An endowment at Rhodes²⁷⁶ had a capital of 20,000 denarii.

On an inscription from Ambryssus²⁷⁷ sums of 7, 12 and 15 denarii are mentioned, evidence, surely, that this coin still had real values.

It is sometimes said²⁷⁸ that by the time of Caracalla gold was so scarce that it had ceased to be readily interchangeable for silver, or that²⁷⁹ the greater part of the gold coins in circulation consisted of aurei minted under Nero and the rulers of the late first and early second century. There seems little, if any, confirmation for either idea.

²⁷³ BGU., 362.

²⁷⁴ Dio, lxxvii, 10, 2.

²⁷⁵ Digest, xv, 1, 11, 4.

²⁷⁶ Laum *op. cit.*, no. 41.

²⁷⁷ Dittenberger, IGS., 1063 (after A.D. 212).

²⁷⁸ *Num. Chron.*, 1916, 42.

²⁷⁹ Mickwitz, *Geld*, 35.

TABLE Y
CARACALLA AUREI

Grains	210/13	211	212	213	214	215	216/17	No Date
94							1	
95						1		
96							1	1
97						1	3	
98		1					2	
99							4	
100							4	
101						1		
102		1					2	
103							1	1
104							1	
105							1	
106						1		1
107	1							1
108	2							
109	1					2		3
110	3			1	1			
111	1	1				3		1
112	3	1		2		2		4
113	2	1	1	1	1	1	1	1
114	2	1		2		1		1
115	1							

MACRINUS

The eighty-three aurei of Macrinus and of Diadumenius show a point of concentration at 111 grains (7.19 grams), with approximately 70% of the coins falling within a range of 109 to 113 grains.²⁸⁰ Macrinus therefore had abandoned the light weights introduced by Caracalla and had gone back to the standard that had been in general use during the past century.

²⁸⁰ *Num. Chron.* (1916, 41) says that all the aurei of Macrinus weigh between 110 and 112 grains.

126 GOLD AND SILVER STANDARDS

The average weight of thirty-six denarii is 49.17 grains (3.19 grams).²⁸¹ The weight of one antoninianus is given as 5.14 grams.²⁸² Sydenham gives the weights of two tridrachmae of Caesarea as 125.8

TABLE Z
MACRINUS AUREI

Grains	217	218	No date
93			1
94			
95			
96	1	1	
97	1		
98			2
99			
100			
101		2	1
102	1		
103			2
104			
105			
106			1
107	2		
108	2		1
109	6	3	1
110	5	5	1
111	13	6	3
112	4	4	1
113	3	3	
114	2	2	
115	1		
116		1	
117			
118		1	

²⁸¹ Edwards (Yale Coll. 109) gives 3.36, 2.29; Naville Sale 2 gives 3.47, 3.41, 2.54, 3.51, 3.71, 3.36, 3.18, 3.03, 3.19, 3.30, 2.88, 3.20, 3.14, 3.60, 3.10, 3.72, 3.27, 2.97, 2.88, 3.40, 3.24, 3.75, 3.0, 3.09, 3.07; Naville Sale 17 gives 3.62, 3.05, 3.53, 3.69; Princeton Univ. gives 2.38, 3.09, 3.72, 2.79, 3.05.

²⁸² Naville Sale 2 gives 5.14.

and 174.5 grains.²⁸³ The British Museum Catalogue gives the weights of thirteen Syrian tetradrachms that average 203.4 grains.²⁸⁴

Using the weight of the denarius, the ratio of gold to silver is 1 : 11.07; using the antoninianus, the ratio is 1 : 10.71. From the two it would seem that a ratio of about 1 : 11 was indicated.

ELAGABALUS

It is said that Elagabalus²⁸⁵ at the beginning of his reign kept the heavy weights of Macrinus, but later went back to the reduced weights of Caracalla. However, Cohen 288 seems to disprove this if catalogues are correct in assigning various coins to this type. This coin was issued in A.D. 218 and its weight varies from 7.22 to 6.21 grams.

The coins of Elagabalus may, with some uncertainties, be divided between mints at Rome and at Antioch. If Cohen type 288 is divided between the two mints and if type 42 is transferred from Rome to Antioch, the assignment of coins to mints made by Mattingly-Sydenham results in two clear-cut groups. The Antioch mint seems to have struck on the basis of 45 to the pound, the Roman mint on the basis of 50 to the pound.²⁸⁶ Neither group shows a clear point of concentration, though the Antioch

²⁸³ Hunter Coll. has 174.2 grains. See last sentence in Note 228.

²⁸⁴ In addition Ratto Sale of Apr. 4, 1927, gives 13.14, 14.69, 13.98.

²⁸⁵ *Festsch. Otto Hirschfeld*, 298.

²⁸⁶ Elagabalus also opened a mint at Nicomedia. The American trade dollar used in the eastern trade may perhaps be mentioned as an instance of a coin struck to meet a particular situation.

128 GOLD AND SILVER STANDARDS

standard seems to have been 110 grains and the Roman 97 grains.

Seventeen denarii struck at Antioch have an average weight of 2.67 grams, while sixty-eight struck at Rome average 3.05 grams.²⁸⁷ Forty-two antoniniani²⁸⁸ struck at Rome have an average weight of 5.1 grams (78.7 grains). It is curious that the lighter denarii should be found at Antioch though perhaps the number is too small to permit inferences of value.

From coins struck at Rome ratios of 1 : 11.03 and 1 : 11.04 are found based on the denarius and antoninianus respectively. This close result would seem to prove the valuation of the antoninianus at 15 to the aureus. Using the coins struck at Antioch a ratio of 1 : 9.4 is found. This is in reasonable accord with the ratio of 1 : 10 which two of the Chinese annals translated by Hirth in his *China and the Roman Orient* say applied to Syria (or Persia?).

The British Museum Catalogue and other sources give the weights of seventeen Syrian tetradrachms that average 201.2 grains.²⁸⁹

In Persia 37 tetradrachms and 22 drachmae issued

²⁸⁷ Edwards (Yale Coll., 109) gives 2.77, 3.47, 2.56, 3.04, 2.52, 2.92, 2.55, *Num. Zeit.* (1914, 228) gives 2.85, 2.84, 2.64; *Num. Chron.* (1939, 42) gives 45.3, 50.3 grains; Naville Sale 2 gives 3.09 grams; *ibid.*, (Sale 17) gives 3.27, 2.90, 3.10; Princeton Univ. has 2.84, 3.12, 3.07, 2.86, 2.98; *Bull. soc. mon. d'Alsace* (1926, 129) gives the average of 32 denarii as 3.17 grams; *Fundbericht Schwaben* (1913, 86) gives 3 that average 2.91; *Viestn. Hrv. Arh.* (1900, 10) gives 2.90; 3.04.

²⁸⁸ *Num. Chron.*, 1939, 40; Princeton Univ. has 4.82.

²⁸⁹ Also from Hunter Coll.

by Volagases V (A.D. 208/222) average 12.60 and 3.60 grams respectively.²⁹⁰

Hammer²⁹¹ gives analyses of eight silver coins, one each with 75, 44, 43.4 and five (including three antoniniani) with 42.8% of silver.

Elagabalus seems to have stopped coinage of the antoninianus sometime in his reign. In the East there is a great abundance of local coinage, indicating that economic activity there was at an extremely high point.²⁹²

TABLE AA
ELAGABALUS AUREI

Grains	Antioch	Rome	Grains	Antioch	Rome
55		1	104	1	
			105	1	
93			106	2	
94		3	107		
95		5	108	1	
96		7	109	7	
97		4	110	4	
98		6	111	7	
99		3	112	1	
100		4	113	1	
101		1	114		
102		3	115	1	
103		2	116	1	

ALEXANDER SEVERUS

Although the aurei of Alexander may be dated within limits of about three years, the number of coins is too small to show any significant differences

²⁹⁰ BMC.; Naville Sale 12; *Rev. Num.*, 1898; Markoff, *op. cit.*; Prokesch-Osten. *op. cit.*

²⁹¹ Hammer, 102; *Num. Chron.*, 1919, 134 does not repeat this quite correctly.

²⁹² *Rev. Num.*, 1899, 274.

in the successive periods. With five exceptions all the gold coins of Alexander shown in the accompanying table are clearly either aurei or quinarii minted on the basis of 50 to the pound.²⁹³ Of these five exceptions, one is an irregular coin.

Alexander is thought to have been deeply concerned with the silver coinage.²⁹⁴ The abandonment of the antoninianus seems to imply an effort to maintain gold and silver at the old ratio of 25 denarii to the aureus rather than at some supposedly different figure introduced by Caracalla or by Commodus. Oertel²⁹⁵ suggests that the aureus was now worth 50 denarii, but this is open to serious doubt. If it is assumed that this was the government rate of exchange between the coins, it implies a ratio between gold and silver of about 1 : 24. This ratio makes silver so much cheaper than it was in the fourth century, that it needs definite confirmation before it can be accepted.

The abandonment of the antoninianus may perhaps be considered a concession to conservatism in finance, but Alexander seems to have been unsuccessful in maintaining the purity of the denarius. The silver content of his coins varies from 50 to 33.8%,²⁹⁶ at the worst a reduction of about 40%

²⁹³ There seems nothing in this list to confirm the statement that Alexander reduced the weight of the aureus to 92 grains, as is stated in *Num. Chron.*, 1919, 134; nor to about 3 grams as stated by Despaux, *Les dévaluations monétaires*, 118.

²⁹⁴ Although the "moneta restituta" of the coins probably refers to the rebuilding of the mint rather than to a revision or restoration of the coinage: see *Num. Zeit.*, 1909, 87.

²⁹⁵ *Camb. Anc. Hist.*, xii, 725.

²⁹⁶ Hammer (p. 103) gives four with 50, two with 47.6, one each with 45, 40.7, 35.8, 35, and 33.8% of silver.

since the time of Caracalla, but on the average a decline of 33%.

The average weight of the aurei issued by Alexander is $97\frac{1}{2}$ grains (6.3 grams) and of the quinarii 50 grains (3.25 grams).²⁹⁷ No single point of concentration is to be found. Ninety-one denarii have an average weight of 47.60 grains (3.08 grams).²⁹⁸

If it is assumed that an aureus was worth 25 denarii, the ratio of gold to silver is 1 : 12.15.

In Persia 24 drachmae issued by Artabanus V (A.D. 213/227) average 3.56 grams²⁹⁹ while 13 issued by Artavasdes (A.D. 227/8) average 3.56 grams.³⁰⁰ One tetradrachm issued by Artaxerxes I (A.D. 226/240), the first of the Sassanian Kings, weighs 13.91 grams,³⁰¹ while 44 drachmae, 9 half-drachmae and 14 silver obols average 3.81, 1.94, and 0.67 grams respectively. Five gold pieces weigh 221, 131, 114.2, 22.4, 21.5 grains, indicating, so it seems, four different denominations. These differences may explain the various denominations in the

²⁹⁷ The statement in Vita, 39 that Alexander was the first to coin gold quinarii is incorrect.

²⁹⁸ Edwards (Yale Coll., 111) gives 2.58, 3.0, 2.17, 2.83, 2.6, 3.21, 3.13; *Num. Zeit.* (1908, 45) gives a heavy one as 4.35; Helbing Sale of Apr. 12, 1927, gives 3.5, 3.8; Naville Sale 2 gives 3.28; *Num. Chron.* (1939, 42) gives 51, 48.8, 37.5, 49.1, 49, 51.3, 53.7, 48.7, 50.3 grains; Princeton Univ. has 2.24, 2.86, 3.43, 2.98, 3.22, 2.55; *Bull. soc. mon. d'Alsace* (1926, 129) gives the average of 64 coins as 3.09 grams; *Fundber, Schwaben* (1913, 86) gives one at 3.13; *Viestn. Hrv. Arh.* (1900, 10) gives 3.36, 2.73.

²⁹⁹ BMC.; Prokesch-Osten *op. cit.*; Markoff, *op. cit.*

³⁰⁰ BMC.; Prokesch-Osten, *op. cit.*; Markoff, *op. cit.*; Naville Sale 12. *Zeit. deutsch. morgenländ. Gesellsch.*, 1880.

³⁰¹ Cahn Sale 71; Babelon, *Traité* iii; Paruck, *Sassanian Coins*; ZDMG., 1880.

132 GOLD AND SILVER STANDARDS

gold coinages of some of the succeeding Roman rulers.

It is said that Alexander issued an extensive series of copper coinage of good quality and that the word "moneta" which occurs on certain coins refers to the copper dupondius.³⁰² In view of the fact that the copper currency was entirely a token coinage, this seems unlikely. Until the silver currency had utterly collapsed, the quality of the copper was a matter of no practical importance.

An inscription from Rome³⁰³ mentions ten aurei as a *congiarium*, while an inscription scratched on the handle of a small silver dish³⁰⁴ indicates that it was sold or pledged for twelve and one-half denarii.

A document from Dura³⁰⁵ dated A.D. 232 gives a dowry list in denarii; another of A.D. 227 mentions 175 "silver" denarii.³⁰⁶

A section of the Justinian Code³⁰⁷ dated in A.D. 229 refers to the semis and triens, but these may be later interpolations in the text.

Comparison of a section of the Digest,³⁰⁸ presumably written in the time of Alexander Severus, with a section in Gaius,³⁰⁹ written at least fifty years earlier, is sometimes taken to indicate a change in

³⁰² *Camb. Anc. Hist.*, xii, 65 based on Pink, *Num. Zeit.*, 1935, 13ff.

³⁰³ CIL., vi, 2998 (A.D. 229).

³⁰⁴ CIL., v, 8122, 1 (A.D. 234).

³⁰⁵ *Dura*, vi, 434.

³⁰⁶ *Dura*, vii/viii, 434.

³⁰⁷ Cod. Justin., III, 28, 12. In spite of Frank, *Econ. Hist.*, 489 there is apparently no section of the Digest that may safely be used to illustrate the fall of the denarius.

³⁰⁸ Digest, ii, 4, 24.

³⁰⁹ Gaius, iv, 46.

the relationship between the aureus and the denarius. The earlier passage speaks of a fine of 10,000 sesterces; the later speaks of a fine of fifty aurei. There seems little if any justification for assuming that the two sums of money are identical. Mommsen believes that the words "fifty aurei" were in-

TABLE AB

ALEXANDER SEVERUS AUREI

Grains	Number	Grains	Number
46	1	96	12
48	1	97	6
49	1	98	9
50	2	99	10
52	1	100	5
63	1	101	9
70	1	102	5
83	1	103	4
86	2	104	2
90	2	105	6
91	1	106	3
93	4	107	1
94	8	109	1
95	6		

serted by the editors of the Digest in the time of Justinian, so that there is no certainty as to the sum of money mentioned by Ulpian and Modestinus. Savigny suggests that the 10,000 sesterces in Gaius should be read as 5000 sesterces, while Lenel in his edition of the *Edictum Perpetuum* suggests "50,000 sesterces," due seemingly to a misunderstanding of Roman monetary terms. Even if it is assumed that Ulpian wrote "50 aurei" there is still no evidence that the amount of the fine had not been changed since the time of Gaius.

MAXIMINUS I

The eleven coins of this reign are too few in number to permit deductions of any value. The ten aurei average 89.8 grains (5.80 grams), showing a serious decline from the preceding reign. It has been said that Maximinus coined gold only in Rome and for the most part only in A.D. 235.

Forty-one denarii show an average weight of 48.38 grains (3.14 grams).³¹⁰ Hammer³¹¹ gives an analysis of two coins with 45.5% of silver. From this insufficient evidence the ratio of gold to silver appears to be 1 : 12.10.

An interesting shop account from Dura,³¹² dated between A.D. 235 and 240, gives prices in denarii. The accounts illustrate not only the small size of the transactions recorded, but also the fact that there was as yet no indication of any depreciation in the market valuation of the denarius. An inscription from Orcistus³¹³ dated in A.D. 237 mentions an endowment of "2500 Attic (drachmae) of silver of account." The editor of the inscription intimates that this represents an effort to define the size of the gift more accurately than if the word "denarius" had been used. The explanation, as a

³¹⁰ *Num. Zeit.* (1914, 228) gives 3.76, 3.40; Edwards (Yale Coll., 112) gives 3.57, 2.53, 2.28, 2.88, 3.08; Princeton Univ. has 3.01, 3.59; *Bull. soc. mon. d'Alsace* (1926, 129) gives the average of 32 denarii as 3.14 grams.

³¹¹ Hammer, 103.

³¹² *Dura, Fourth Season*, 128, 141.

³¹³ *Jour. Hellenic Studies*, 1937, 1. *Pap. Oxyrh.*, 705 (A.D. 202) does not show that the Attic drachma was then worth four Egyptian drachmae.

matter of fact, raises more questions than it settles. Italian inscriptions erected twenty years later still show that the denarius had a real value.

PUPIENUS AND BALBINUS

Only two aurei of this period are listed here.³¹⁴ Their average weight is $85\frac{1}{2}$ grains (5.54 grams) which is almost exactly on the basis of 60 to the pound.

For some reason these rulers restored the antoninianus to the coinage system. According to a recent authority³¹⁵ older denarii were simply overstruck as antoniniani and re-issued on that basis. One silver coin is said to weigh 49.2 grains (3.19 grams),³¹⁶ while an analysis of one coin issued by Pupienus shows 49% of silver. Twenty-one antoniniani show an average weight of 71.76 grains (4.65 grams) with a high of 84.3 and a low of 47 grains.³¹⁷ These coins, like others found in the Dorchester hoard, show no wear. Mattingly points out that there is no difference in denomination between the high and low weights, which indicates that the coins were struck *al marco* and not according to weight. The average weight of these antoniniani shows a decrease of about 10% below the weight prevailing from A.D. 215 to 222.

With the appearance of the antoninianus as the common silver coin, one is forced to question the

³¹⁴ *Dura, Fourth Season*, 128, 141.

³¹⁵ *Num. Chron.*, 1939, 44. Perhaps this is to be dated soon after the reign of Balbinus and Pupienus rather than during it.

³¹⁶ Edwards, Yale Coll., 113; *Viestnika (op. cit.)* gives one at 2.79.

³¹⁷ *Num. Chron.*, 1939, 40; Naville Sale 17 gives 5.66 and 4.83.

136 GOLD AND SILVER STANDARDS

meaning of the word "denarius" in papyri and on inscriptions. Another problem is raised as to the value of the older denarii that remained in circulation and that were not restruck as antoniniani. Apparently some denarii remained in circulation until the time of Diocletian (see Table AP).

TABLE AC			
MAXIMINUS, PUPIENUS, BALBINUS			
Grains	Maximinus	Pupienus	Balbinus
52	1		
71	1		
76	1		
81			1
88	3		1
91	1		
92	1		
100	2		
104	1		

GORDIAN III

The ninety-five coins of this ruler may include two quinarii and one $1\frac{1}{2}$ aureus piece or perhaps these coins represent two double trientes and one $1\frac{1}{8}$ aureus piece. Ninety-two coins are apparently aurei. Their average weight is approximately 75 grains (4.86 grams), though the point of greatest concentration in the distribution of weights is 78 grains.³¹⁸ This is about half way between a basis

³¹⁸ Although a few gold coins of Gordian I are known it has not been possible to find their weights. The weights of the gold coins of Gordian III do not seem to confirm the statement of Giesecke, *Geldwesen*, 172, that Gordian struck on the basis of 64 to the pound, equivalent to 5.11 grams to the aureus. The statement in *Num. Chron.*, 1916, 45 that for a few years preceding A.D. 242 the "striking of aurei had ceased altogether" save on a limited scale for ceremonial purposes does not seem warranted.

of 60 to the pound and of 70 to the pound. It is interesting to point out that the coin weighing 52 grains represents exactly two-thirds of 78 grains. Perhaps this is the first appearance of the fractional parts of an aureus based on thirds. Such coins are said to make their first appearance somewhat later. They were of practical value if the aureus was equal either to fifteen or to thirty antoniniani (or to any other multiple of three).

Following the example of Pupienus and Balbinus, Gordian minted the antonianus in large quantities. The average weight of 567 of these coins from the Dorchester hoard is 67.1 grains (4.35 grams), with a high of 100 and a low of 40.4 grains.³¹⁹ The average weight of 345 coins from a hoard at Plevna is 68.8 grains (4.46 grams).³²⁰ The average weight of 675 coins from Baalan³²¹ is slightly higher, being 69.22 grains (4.486 grams). The average weight of all these coins shows a decrease of about 5% from the preceding reign and of about 14% from the time of Caracalla.

³¹⁹ *Num. Chron.*, 1939, 40; Princeton Univ. has 4.44, 5.01, 5.18, 3.97, 4.56, 3.41, 3.97, 3.87, 3.43, 3.83, 4.17.

³²⁰ *Num. Chron.*, 1924, 237; *Num. Zeit.*, (1914, 228) gives 4.65, 3.03, 2.94, 3.35; *Num. Zeit.*, (1908, 45) gives certain heavy ones as 5.58, 5.58, 5.63, 5.7, 5.88, 6.56; Elmer (*Verzeichnis*) gives the theoretical weights of the denarius and antoninianus as 3.03 and 4.54 grams respectively.

³²¹ *Bull. archeol.*, 1932/33. Seven from Müttersholz are said to average 4.20 grams; *Bull. Soc. Mon. d'Alsace*, 1926, 129. Twenty-nine coins in *Bull. hist. et scientif. Auvergne*, 1939, 56 have an average weight of 4.14 grams with a low of 2.6 and a high of 5.3 grams. *Viestnika* (*op. cit.*) gives 15 that average 4.10.

138 GOLD AND SILVER STANDARDS

Twenty-two coins have an average silver content of 41.7%, the best coin having 58.9%.³²²

The weights of a few denarii are known.³²³ These average 51.2 grains (3.32 grams), and are therefore heavier than any group since the first century. However, the number is too small to permit any valid deductions.

TABLE AD
GORDIAN III

Grains	Number	Grains	Number
45	1	73	7
52	1	74	9
61	1	75	5
64	1	76	6
65	1	77	3
66	3	78	12
67	1	79	3
68	2	80	7
69	4	81	7
70	4	83	2
71	5	85	1
72	7	111	1

The British Museum Catalogue gives the weights of ten Syrian tetradrachms³²⁴ that average 189.4 grains. One tetradrachm from Caesarea is said to weigh 127.14 grains (8.24 grams).³²⁵

³²² Hammer (103) gives one with 58.9, five with 49, two with 44, five with 36.1 and one with 28.2% of silver; *Num. Chron.* (1924, 238) gives one each with 25.88 and 45.42%; *Num. Zeit.* (1893, 431) gives one with 27%.

³²³ Naville Sale 17 gives 3.55; *Num. Chron.* (1939, 42) gives 57.5 grains; Princeton Univ. has 1.99.

³²⁴ In addition the Hunter Coll. has 187.7, 166.8, 178.2, 220.7 grains; Ratto Sale of Apr. 4, 1927 gives 13.12, 12.19, 13.08, 12.36, 13.50.

³²⁵ Windisch-Graetz Coll.

The low weights of the aureus that characterize the period from A.D. 238 to 268 may perhaps be explained as an effort on the part of the government to have that coin reflect a lowered market, and perhaps legal, valuation of the antoninianus. From the weights given here it appears that the ratio of gold to silver was 1 : 12.15.

PHILIP THE ARAB

The coins of this reign include not only those of Philip, but also those of his wife, M. Otacilia Severa, and of his son, Philip Caesar. The last group are the most uniform in weight, their average being 68.5 grains (4.44 grams). The coins of Philip Augustus and of Otacilia may perhaps be considered to include two double trientes, four $1\frac{1}{2}$ aureus pieces, and the rest aurei on the basis of 70 to the pound, their average weight being 67.9 grains (4.40 grams).

The Dorchester hoard contained 711 antoniniani of this reign with an average weight³²⁶ of 62.9 grains (4.11 grams). These coins had a high of 99.8 and a low of 33.2 grains. The hoard of Baalan³²⁷ contained 488 coins with an average weight of 4.27 grams. These weights make extremely questionable the suggestion³²⁸ that in A.D. 247 the theoretical

³²⁶ *Num. Chron.*, 1939, 40; *Num. Zeit.* (1908, 45) gives a heavy one as 5.73; Princeton Univ. has 4.01, 3.77, 4.06, 4.05, 3.39, 5.06, 4.10, 4.21, 4.19, 4.34, 3.38, 3.42, 3.89, 3.66; *Atti e Memorie* (1919, 36) gives one at 4.60; *Viestnika (op. cit.)* gives 8 that average 4.0 and 3 of Philip II that average 3.76 grains; *Num. Zeit.* (1893, 431) gives 10 that average 4.14 and 10 each of Philip II as Caesar and Augustus that average 4.30 and 4.08 respectively.

³²⁷ *Bull. archeol.*, 1932/33.

³²⁸ Elmer, *Verzeichnis*.

140 GOLD AND SILVER STANDARDS

weight of the antoninianus was reduced to 3.84 grams or to 1/84th of a pound.

Analyses of fourteen coins³²⁹ show a silver content varying from 50 to 32%, with an average of 43.7%.

The British Museum Catalogue gives the weights of forty Syrian tetradrachms that average 187.5 grains.³³⁰

From the weights given here it appears that the ratio of gold to silver was 1 : 13.4, a very decided change from the preceding reign but a ratio in reasonable accord with that of the next two reigns.

It has been suggested³³¹ that in the time of Philip the aureus was worth 60 denarii or 65 denarii.³³² This is based on the well-known inscriptions from Kerdassi in Nubia,³³³ which read as follows:

5008: “. . . I spent 6500 (?) drachmae in the second year for the god Pursepmonis.”

5010: “. . . obeisance of Psentuaxis . . . priest of the guild for the second time. . . For the first time 20 gold pieces were spent and for the second 30 gold pieces.”

As first read, these two inscriptions were used to

³²⁹ Hammer, 103 gives three with 50 and one each with 47.5, 47.4, 45, 44.3, 43.5, 39.8, 32% of silver; *Num. Chron.* (1924, 238) gives one each with 36.05 and 44.90% of silver.

³³⁰ In addition the Hunter coll. gives 175.1, 169.2, 198.2, 186.2, 174.6, 190.8, 222.9, 195, 192.8, 171.2, 207, 163, 190.4, 187, 187.3 grains; Ratto Sale of Apr. 4, 1927, gives 8.82, 13.77, 13.04, 12.24, 11.92, 12.57, 11.88, 12.73, 13.83, 10.50, 11.71, 12.21.

³³¹ *Camb. Anc. Hist.*, xii, 725; Wilcken in *Z. f. N.*, 1887, p. 325; Kubitschek in *Quinq.*, p. 105; Mickwitz, *Geld*, p. 51; Heichelheim in *Klio*, XXVI (1933), p. 103.

³³² *Num. Chron.*, XIX (1939), p. 44. Kubitschek, *Quinq.*, p. 105 says possibly 6 drachmae to 1 denarius.

³³³ *C.I.G.*, 5008, 5010 (241/244 A.D.).

support the statement that 20 aurei were then worth 3500 drachmae; a later reading was used to support the statement that 20 aurei were then worth 6500 drachmae.

TABLE AE

PHILIP

Grains	Philip	Otacilia	Philip Caesar
46	1		
48	1		
53	1		
61		1	
62	1		
63		1	
64	4	2	
65	3		1
66	1		3
67			1
68	2		
69	1	2	1
70			1
71	1		
72	1		1
73	3	1	1
74			1
75			
76	1		1
79		1	
84	1		
97	1		
110		1	
111	1	1	

It is unfortunate that the figures representing the number of drachmae are a matter of uncertainty; but, in view of that uncertainty, any inferences from these inscriptions should be made as possibilities rather than as facts. To say that these inscriptions show a value of the drachma 31% lower than in the

time of the Antonines³³⁴ or a 170% decrease from the time of Commodus³³⁵ is, it seems, going beyond the evidence. The inscription has also been used to support the theory that the relation of gold to silver was 1 : 5.86,³³⁶ but of course nothing in the inscription proves this, even if one accepts the second reading as correct.

TRAJAN DECIUS

Decius struck gold not only in his own name but also in those of his wife and of his two sons. The distribution of weights is puzzling, anticipating as it does the confused coinage of Trebonianus, Volusianus, Valerian and Gallienus. The coins that may be considered aurei issued by Decius in his own name average about 66½ grains; those issued for Etruscilla average about 67½ grains, while the few coins of the two sons are lighter. These differences, of course, may be due to the small number of available weights, but it should be pointed out that the average weights mean little, due to the wide range covered by the coins.

The average weight of 1364 antoniniani found at Plevna is 63.67 grains (4.12 grams);³³⁷ the average of 594 coins from Dorchester is 58.1 grains (3.76

³³⁴ Mickwitz, *Geld*, p. 51.

³³⁵ *Klio*, XXVI (1933), p. 103. Arithmetically this is an impossible decrease.

³³⁶ Kubitschek, *Quinq.*, p. 105.

³³⁷ *Viestnika* (op. cit.) gives 3.73, 3.92, 2.89 for Decius; 3.22, 3.17 for Etruscilla; 4.51, 3.93 for Etruscus; *Num. Zeit.* (1893, 431) gives 10 of Decius that average 3.90; ten of Etruscus at 3.90 and ten of Hostilian at 3.59; *Num. Chron.*, 1924, 237; *Atti e Memorie* (1919, 36) gives one at Decius at 3.75 and one of Etruscilla at 4.20.

grams); the average of twelve coins in the Princeton collection is 3.83 grams. The difference in weight between the coins from Plevna and those from Dorchester is surprisingly large, particularly in view of the fact that the latter group are said to show no wear.³³⁸

TABLE AF
TRAJAN DECIUS AUREI

Grains	Decius	Etruscilla	Herennius Etruscus	Hostilian
38			1	
50		1		
52	1			
54	2		1	1
56	1	1	1	
57			1	
58		1		
59	1	1	1	
60	1	1		
61	1	1	2	2
62	2	3		1
63	2	1		1
64	3	1	1	
65	2	1		1
66	2	1	1	
67	7	3	1	
68	2	3		
69	3	1		
70		2		
71	3	2		
72	2	1		
73				1
74	4	1		
75	1	2		
76	2	2		
77	1			
78	1			
79	1			
82		2		
94		1		
120/130	1			

³³⁸ *Num. Chron.*, 1939, 40.

144 GOLD AND SILVER STANDARDS

The British Museum Catalogue gives the weights of thirty-nine Syrian tetradrachms that average 190.6 grains.³³⁹ It was in this reign that the practice of overstriking old denarii as antoniniani became common³⁴⁰ if one may judge from the Dorchester hoard. Thirteen coins³⁴¹ show a silver content varying from 75 to 40.6%, with an average of 41.9%.

From the weights given here, the ratio of gold to silver is 1 : 13.

An inscription from Ostia³⁴² mentions a sportula of three denarii given to the *decuriones*, while one from Tenos³⁴³ mentions sportulae of one and two denarii. Both these cases seem contemporary gifts rather than the distribution of endowment income. Both indicate that there was still market value in the coin designated as a denarius.

TREBONIANUS GALLUS AND VOLUSIANUS

The coins of Trebonianus and of Volusianus, while offering a wide diversity of weights and no clear concentration at any point, are clearly heavier than those of the preceding reign.

Blanchet³⁴⁴ in an interesting study has divided the coins of these two rulers into aurei and double

³³⁹ In addition the Hunter Coll. has 183.3, 209.6, 205.5, 207.4, 183.6, 195.9, 176.2, 165, 183.9, 200.4, 193.6, 169.6, 170.7, 172.3, 166.7; Ratto Sale of Apr. 4, 1927 gives 11.76, 10.78, 12.44, 12.44.

³⁴⁰ *Num. Chron.*, 1939, 40.

³⁴¹ Hammer, 103 gives one with 75, one with 44 and two with 40.6% of silver; *Num. Chron.* (1924, 238) gives one each with 43.89, 42.76, 42.6, 42.47, 34.85, and 20.29% of silver.

³⁴² *CIL.*, xiv, 352.

³⁴³ Dittenberger, *IGS.*, 890.

³⁴⁴ *Études de Numismatique*, ii, 105ff.

trientes on the basis of whether the head was radiate or decorated with laurel. He found average weights of 5.86 and 3.65 grams respectively and no wide discrepancies. The larger number of pieces in the present tables, divided in the same way, give slightly different results: 5.81 and 3.65 grams for Trebonianus, and 5.64 and 3.78 grams for Volusianus. Assuming descriptions have been correctly given in the catalogues and elsewhere, the present results offer some difficulties: a coin of 6.99 grams among the radiate coins of Trebonianus, one of 3.01 grams among the radiate coins of Volusianus, and one of 5.92 grams among the laureate coins of Volusianus. The same system of division seems to fail utterly when applied to the coins of Valerian and Gallienus, and not to work with the coins of Decius or Philip. Too much stress should not, therefore, be laid on it here. This is made clear by table AG which includes coins up to 100 grains issued by Philip, Decius, Trebonianus and Volusianus.

Grouped by variations of 5 grains (about $\frac{3}{10}$ th grams) the coins of Trebonianus and Volusianus appear as shown in table on p. 146.

Two points of concentration are evident in this tabulation. The heavier shows thirty-nine coins weighing from 86 to 95 grains, the lighter thirty-four coins weighing from 51 to 65 grains. It will be noticed at once that the lighter group indicates weights about two-thirds those of the heavier group.

All the coins appearing in the tabulation can be accounted for by assuming there are four trientes,

146 GOLD AND SILVER STANDARDS

Weight in grains	Number of coins		Total
	Trebonianus	Volusianus	
31/35	0	1	1
36/40	1	1	2
41/45	1	0	1
46/50	2	7	9
51/55	9	6	15
56/60	4	1	5
61/65	8	5	13
66/70	2	0	2
71/75	0	1	1
76/80	0	3	3
81/85	7	3	10
86/90	6	10	16
91/95	9	12	21
96/100	2	1	3
107	1	0	1
Total	<u>52</u>	<u>51</u>	<u>103</u>

forty-two double trientes, fifty-six aurei and one $1\frac{1}{8}$ aureus piece or, to keep the standard in better agreement with that of Decius, by assuming that there are four double trientes, forty-two aurei, fifty-six $1\frac{1}{8}$ aureus pieces and one $1\frac{1}{2}$ aureus piece. On this basis the aureus was struck either at fifty to the pound, or at eighty to the pound. However, there is nothing on the coins themselves to indicate this difference in denomination.

The average weight of 550 antoniniani mostly from the Dorchester hoard³⁴⁵ is 54.11 grains (3.51

³⁴⁵ *Num. Chron.*, 1939, 40; *Bull. hist. et scientif. Auvergne* (1939, 56) gives 35 coins of the two rulers that average 3.47 grams with a low of 2.7 and a high of 4.9 grams; *Num. Zeit.* (1893, 431) gives 10 of Trebonianus and 10 of Volusianus that average 3.62 and 3.74 re-

grams), with a high of 86.4 and a low of 27.9 grains. The silver content of the coins of Trebonianus varies from 44 to 29.7%, and of the coins of Volusianus from 80.6 to 33.2%.³⁴⁶ In the former the average silver content is 34.9%, while in the latter it is 60.9%.

The British Museum Catalogue³⁴⁷ gives the weights of twenty-three Syrian tetradrachms of Trebonianus which average 187.9 grains and of seven coins of Volusianus³⁴⁸ which average 182.8 grains.

Since only four aurei of Aemilianus appear in the tables, it is unsafe to base any generalizations on them. Forty-three antoniniani from the Dorchester hoard show an average weight of 53.5 grains (3.47 grams), with a high of 72.8 and a low of 43 grains.³⁴⁹

From the weights given here a ratio of 1 : 13 is indicated for the three rulers.

In view of the financial debacle that occurred under Valerian and Gallienus, it is perhaps natural that we should find in this period the latest reference to a gift of a few denarii that was deemed worthy of commemoration. An inscription from Minturnae³⁵⁰

spectively. *Viestnika* (op. cit.) gives 17 of Trebonianus and 10 of Volusianus that average 3.49 and 3.58 grams respectively; *Atti e Memorie* (1919, 36) gives one of Volusianus at 3.25.

³⁴⁶ For Gallus, Hammer, 104 gives one each with 44, 37, 30, 29.7% of silver and for Volusianus two with 80.6 and one each with 72.4, 38, 33.2% of silver.

³⁴⁷ See also coins in the Hunter Coll.

³⁴⁸ See also coins in the Hunter Coll.

³⁴⁹ *Num. Chron.*, 1939, 40. *Viestnika* (op. cit.) gives one at 3.13; *Num. Zeil.* (1893, 431) gives 10 that average 3.60.

³⁵⁰ CIL., x, 6012 (dated under Aemilianus).

148 GOLD AND SILVER STANDARDS

records a sportula of three denarii. This also is probably a contemporary gift rather than a distribution of income from invested capital.

TABLE AG
LAUREATE AND RADIATE AUREI

Grains	Philip		Decius		Trebon.		Volus.		Totals	
	L	R	L	R	L	R	L	R	L	R
32							1		1	
40							1	1	1	1
42					1				1	
46	1						1		2	
47					1				1	
48	1								1	
50							2		2	
51					1				1	
52			1			1			1	1
53	1				1	1	1	1	3	2
54			1		3		1		5	
55			1						1	
56			1		1		1		3	
57			1						1	
58					1				1	
59			1		1				2	
60							1		1	
61			1		2		1		4	
62	1		3		1				5	
63			1		1				2	
64	1		3						4	
65	4		5		2				11	
66	2		2		1				5	
67			5						5	
68	1		5						6	
69	1		1		1				3	
70										
71		1	3						3	1
72	1		1						2	
73	1	1	2					1	3	2
74		1	3						3	1
75										

TABLE AG—*Continued*

Grains	Philip		Decius		Trebon.		Volus.		Totals	
	L	R	L	R	L	R	L	R	L	R
76	1		3						4	
77			1						1	
78			1					1	1	1
79			1						1	
80								1		1
81						1				1
82						2				2
83						1				1
84	1							1	1	1
85						2		1		3
86						1	2		2	1
87						1		4		5
88						1		1		2
89								2		2
90						1				1
91						2	1	1	1	3
92						1		4		5
93						2	1	3	1	5
94						4				4
95								1		1
96										
97	1								1	
98								1		1
									<u>97</u>	<u>48</u>

Cohen numbers:

Philip—laureate 23, 56, 71, 86, 164, 191, 213
 radiate 104, 118, 177

Decius—laureate 1, 3, 31, 48, 62, 85, 104, 107, 108

Trebonianus—laureate 1, 12, 16, 19, 60, 83, 92
 radiate 18, 25, 28, 36, 62, 66, 82, 113

Volusianus—laureate 4, 6, 10, 56, 69, 83, 134
 radiate 19, 24, 54, 57, 82, 88, 117

150 GOLD AND SILVER STANDARDS

Grains	TABLE AH		
	TREBONIANUS, etc., AUREI		
	Trebonianus	Volusianus	Aemilianus
32		1	
40	1	1	
42	1		
46		1	
47	1	1	
48	1		1
49		1	
50		4	1
51	1		1
52	4	2	
53	1	2	
54	3	1	
55		1	
56	1		
58	2	1	
60	1		
61	3	2	
62	1	2	1
63	1		
64	2		
65	1	1	
66	1		
68	1		
72			
73		1	
78		2	
80		1	
81	1		
82	2		
83	2	1	
84		1	
85	2	1	
86	2	3	
87	1	4	
88	1	2	
89		1	
90	2		
91	2	3	
92	4	4	
93		3	
94	3	2	
97	2	1	
107	1		

VALERIAN AND GALLIENUS

The gold coins of this period, covering the fifteen years from A.D. 253 to 268, and numbering nearly 500, present a peculiarly difficult problem.³⁵¹ Two hundred and five of these coins may be assigned to the period before the capture of Valerian, the rest to the sole reign of Gallienus. It is interesting to note that, if the assignment of mints and dates in Mattingly-Sydenham is correct,³⁵² Gallienus alone coined gold after the capture of Valerian.³⁵³ Apparently all the coins of Salonina and of Valerianus Caesar appeared before that time.

Of the coins dated to the joint reign only twenty-seven out of 205 weigh over sixty grains, while in the sole reign 138 out of 280 weigh over sixty grains. This fact in itself is evidence for some change in the system of coinage. However, any attempt to suggest a system of coinage for this period must be advanced with caution. Lack of technical skill in the mint hardly seems a satisfactory explanation for any of the difficulties.

An interesting comparison with the coinage of the sole reign of Gallienus is afforded by the coinage of Postumus, dated A.D. 260 to 268. The weights of aurei of Postumus are as follows:³⁵⁴

³⁵¹ For different ideas as to the family of Valerian and Gallienus compare Mattingly-Sydenham, v, i, 28, and Bernhart, *Handbuch zur Münzkunde*. Bernhart, *op. cit.*, 19, indicates that the custom of weighing gold began about the middle of the third century.

³⁵² For the dating of Valerian and Gallienus see also *Num. Chron.*, 1929, 218 and *Berylus*, 1938, 47.

³⁵³ *Chron. an.*, 354 speaks of a two aureus piece in connection with Gallienus.

³⁵⁴ Found in BMC.; Hirsch Sale 24; Naville Sales 16, 17; Bachofen Coll.; Basel Munzhand., Sales 6, 8; E. T. Newell Coll.

152 GOLD AND SILVER STANDARDS

Weight in grains	Numbers by mints		
	Lyons	Cologne	Milan
69		1	
71			1
73	1		
74	1		
75	1		
76	1		
78	1		
80	2		
81	2		
82	1		
83	1	1	
84	3		
85		1	
86	2	2	
87	2	1	
88	2		
89	1	1	
90	2		
91	5	2	
92	4	1	
93	4		
94	1	1	
95	2	1	
96	2	1	
97	3		
98	2		
100	1	1	
101	1	1	
103	1	3	
104		1	
105	1		
108	2		
111	1		

The distribution of weights seems to indicate coinage on the basis of 50 to the pound, but with careless adherence to that standard.

The difference between the coinage of Postumus and that of Gallienus as sole ruler may be shown by arranging the coins in groups of five grains:

Weight in grains	Coins of Gallienus	Postumus
to 24	53	
25/29	6	
30/34	12	
35/39	11	
40/44	10	
45/49	10	
50/54	24	
55/59	15	
60/64	14	
65/69	34	1
70/74	24	3
75/79	17	3
80/84	15	10
85/89	8	12
90/94	12	20
95/99	6	11
100/104	5	9
105/109	4	3
110/114		1

Under Valerian and Gallienus there was a further debasement of the antoninianus, the silver content falling, so it is said, to about 25%.³⁵⁵ This state-

³⁵⁵ Bernhart, *Handbuch*, 21, suggests that until A.D. 256 the antoninianus had averaged 50% of silver. Hammer, 104 gives two coins of Valerian with 40% of silver and one each of Gallienus with 72, 50, 47, 34.6% of silver. The coins called "silver-plated" have much less silver.

ment, however, is based on too few analyses to be thoroughly dependable. This decrease in the value of the antoninianus should, theoretically at least, have brought about a decrease in the weight of the aureus. If one considers the apparent decrease of weight in the aureus under Trebonianus, the length of the reign of Valerian and Gallienus, and the comparatively good coinage of the succeeding ruler, Claudius, it seems that there should be evident a period of decreasing weights following A.D. 253 and a period of increasing weights preceding A.D. 268.

On the basis of the dating suggested by Mattingly-Sydenham the coins of Valerian and Gallienus may be analyzed chronologically as follows:³⁵⁶

A.D. 253:

Valerian: 2.58, 2.62, 2.64, 2.79, 2.85, 2.88, 2.98, 3.20, 3.44, 4.03, 4.48, 6.48 grams. Assuming these represent nine double trientes, two aurei and one $1\frac{1}{3}$ aureus piece, the average weight of the aureus is 4.40 grams or on the basis of 70 to the pound.

Gallienus: 4.16, 5.58 grams. These fall rather badly into the standard of 70 to the pound, if the heavier piece is considered a $1\frac{1}{3}$ aureus piece.

A.D. 253/254:

Valerian: 2.67, 2.70, 2.72, 2.74, 3.15, 3.32, 3.60, 5.00, 5.30, 5.60 grams. Assuming that these coins represent double trientes, aurei, and $1\frac{1}{3}$

³⁵⁶ Mommsen, *Röm. Münzwesen*, 776 n. 116 says, the first sure one-third aureus piece is found at this time.

aureus pieces, the weight of the aureus is 3.80 grams, or a basis of 80 to the pound.

Gallienus: 2.30, 2.78, 2.84, 2.89, 3.07, 3.12, 3.29, 3.62, 3.64, 3.70, 3.84, 3.87, 3.88, 4.16 grams. On the assumption that these coins represent six double trientes and eight aurei, the weight of the aureus is 3.92 grams; if, however, the heaviest piece is considered a $1\frac{1}{3}$ aureus piece, the weight of the aureus is 3.82 grams. Both of these assumptions indicate a basis of 80 to the pound. If the weights of the coins are thought to indicate ten aurei and four double trientes, then the indicated basis is ninety to the pound.

A.D. 254/255:

Gallienus: 2.06, 2.30, 2.78, 2.83, 2.93, 3.07, 3.14, 3.50, 3.75, 3.95 grams. Assuming that these coins represent either four or five aurei and the balance double trientes, the weight of the aureus is either 3.78 or 3.64 grams. In either case, the basis is 80 to the pound, very badly adhered to. The basis of 90 to the pound is less likely.

A.D. 255/256:

Valerian: 2.08, 2.15, 2.33, 2.60, 2.67, 2.79, 2.89, 3.09, 3.09, 3.28, 3.38, 3.40, 3.40, 3.78, 5.00 grams. On the assumption that these coins represent one $1\frac{1}{3}$ aureus piece, seven aurei, and seven double trientes, the weight of the aureus is 3.53 grams, or on the basis of 90 to the pound.

Gallienus: 2.09, 2.30, 2.52, 3.36, 5.35 grams. On

156 GOLD AND SILVER STANDARDS

the assumption that there is one aureus in this list (3.36 grams), the basis is 90 to the pound.

A.D. 256/257:

Valerian: 1.55, 1.90, 2.03, 2.09, 2.10, 2.15, 2.22, 2.31, 2.36, 2.56, 2.57, 2.60, 2.66, 2.68, 2.95, 3.30, 3.30, 3.53, 3.74, 3.90, 4.11 grams. On the assumption that these coins represent three $1\frac{1}{2}$ aureus pieces, four aurei, thirteen double trientes, and one triens, the average weight is about 3.3 grams, or on the basis of 90 to the pound.

Gallienus: 2.00, 2.07, 2.39, 2.45, 2.48, 2.49, 2.69, 2.72, 2.90, 3.65 grams. If two of these coins are assumed to be aurei and the balance of the coins double trientes, the weight of the aureus is 3.50 grams, about 6% heavier than the contemporary coins of Valerian.

A.D. 257/258:

Valerian: 2.50, 2.74, 3.50 grams.

Gallienus: 1.48, 2.17, 2.39, 3.40, 3.69 grams. Assuming these coins represent aurei, double trientes and trientes, the weight of the aureus is approximately 3.6 grams or on the basis of 90 to the pound.

A.D. 258/259:

Gallienus: 1.65, 1.90, 2.03, 2.21, 2.30, 2.48, 2.72, 2.80, 3.05, 3.08, 3.10, 3.66, 3.85 grams. On the assumption that these represent seven aurei, five double trientes and one triens, the weight of the aureus is 3.3 grams, or on the basis of 90 to the pound.

The legend IMP C P LIC VALERIANUS P F AVG appears to have been used during the years A.D. 255 to 257. Weights are as follows: 1.55, 1.90, 2.03, 2.08, 2.09, 2.10, 2.10, 2.15, 2.22, 2.31, 2.32, 2.33, 2.36, 2.40, 2.47, 2.49, 2.50, 2.56, 2.57, 2.60, 2.60, 2.62, 2.66, 2.67, 2.79, 2.85, 2.89, 3.00, 3.09, 3.28, 3.30, 3.40, 3.53, 3.75, 4.11, 5.00, 5.30, 5.60 grams. On the assumption that these coins represent three $1\frac{1}{3}$ aureus pieces, thirteen aurei, twenty-four double trientes, and one triens, the average weight of the aureus is 3.4 grams, or the basis of 90 to the pound.

There are sixteen legends on the reverse of the coins that are common both to Valerian and to Gallienus:

- | | |
|-------------------------|----------------------|
| 1. AETERNIT AVGG | 2. AETERNITAS AVGG |
| 3. APOLINI CONSERVA | 4. FELICITAS AVGG |
| 5. FIDES MILITVM | 6. IOVI CONSERVA |
| 7. IOVI CONSERVATORI | 8. LAETITIA AVGG |
| 9. LIBERALITAS AVGG III | 10. ORIENS AVGG |
| 11. PAX AVGG | 12. PROVIDENTIA AVGG |
| 13. RESTITVTOR ORBIS | 14. ROMAE AETERNAE |
| 15. VICTORIA AVGG | 16. VIRTVS AVGG |

Legends 5, and 6 were used by Gallienus in his sole reign as well as in the joint reign. Weights of coins on which legends 1 and 8 were used indicate a basis of 80 to the pound; weights of coins on which legends 3, 4, 7, 10, 11, 14 were used indicate a basis of 90 to the pound. The other groups afford no indication of any basis.

Of the coins struck by Gallienus in his sole reign, those with GALLIENAE AVGVSTAE—VBIQVE PAX

which range in weight from 4.81 to 7.15 grams do not indicate any standard; those with the masculine form of Gallienus and **VBIQUE PAX** indicate a basis of 80 to the pound; those with **VOTIS X ET XX**, which are dated in A.D. 263 indicate a basis of 90 to the pound. If all the other coins of the sole reign are grouped together the result is as follows:

58 trientes averaging 62 grains to the aureus.

55 double trientes averaging 63.2 grains to the aureus.

99 aurei averaging 62 grains to the aureus.

14 heavier pieces averaging 63 grains to the aureus, if they are considered as $1\frac{1}{3}$ aureus pieces. These results indicate a basis of 80 to the pound.

The preceding analyses may with some probability of correctness be summarized as follows:

A.D. 253/254: coinage at 70 to the pound.

A.D. 255/263: coinage at 90 to the pound.

A.D. 264/268: coinage at 80 to the pound. In view, however, of the inability to arrange chronologically coins issued after A.D. 260 there may well be, in this later period, coins issued at 70 to the pound.

That there was a definite scheme of coinage during these sixteen years seems more reasonable than that there was no standard. The latter view implies the granting of full freedom of action to the officials in charge of the mints. To say that the gold coins of this period represented bars of gold with pictures

and legends but with no fixed value is an easy way of avoiding the problem presented by the variety of weights found in the coins of Valerian and of Gallienus, but the very variety of weights as of legends (over eighty-five for Gallienus) seems to be against that view. In large transactions between debtor and creditor, gold has, theoretically at least, passed by weight, whether in Roman or in modern days, but small transactions, involving, let us say, a single gold piece, are tremendously handicapped if it is necessary for that single piece to be weighed and its exchange value in subsidiary coins made a matter of bargaining. If the government were coining gold solely for its own purposes, there would be a large and very obvious saving in reducing the number of pieces coined from a pound of gold. It is interesting to note that, in the forged letters said to have been written about Claudius by Valerian and Gallienus, gold coins, and those presumably of low weights, are referred to by number and not by weight.³⁵⁷ In one case 300 trientes are mentioned. On the basis of 90 aurei to the pound, these amount to over a pound of gold.³⁵⁸ It is tempting to infer that a pound of gold was intended, which would imply aurei on the basis of 100 to the pound, but in that event it is strange to find a writer mentioning the number of pieces, at

³⁵⁷ *Vita Claud.*, 14, 17.

³⁵⁸ There seems no evidence that higher officials were paid in gold rather than in subsidiary coins, in spite of Giesecke, *Geldwesen*, 173. Certainly until well into the reign of Diocletian, pay classifications were still on the old basis of sesterces. It is possible that the copper coins because of their greater weight were worth more than the very debased "silver" coins.

a time when it was customary to speak of gold and silver by the pound.

In Britain at this time, local copies of imperial coins appear in a flood, due, perhaps, to the depreciation of the official coins.

As was the case in Germany after the first World War, this period of depreciating coinage, though an almost insurmountable handicap to regular business, was an 'Eldorado for speculators.'³⁵⁹ Where the German operator made use of foreign exchange as the basis of his trading, his Roman counterpart could make use of his government's gold coins.

It has been suggested³⁶⁰ that in A.D. 264 there was a reduction in the theoretical weight of the antoninianus to 3.41 grams, or one ninety-sixth, and of the denarius to 2.27 grams, or 1/144th, of a pound. But here again there is no real evidence for this statement. *Al marco* coins do not readily show changes in standards. The average weight of 409 antoniniani from the Dorchester hoard is 49.3 grains (3.20 grams).³⁶¹ The average of 237 coins of Valerian and of 482 coins of Gallienus found at Baalan³⁶² is 3.59 and 3.60 grams respectively. The

³⁵⁹ Mickwitz, *Geld*, 59.

³⁶⁰ Elmer, *Verzeichnis*.

³⁶¹ *Num. Chron.*, 1939, 40. *Atti e Memorie* (1919, 36) gives 13 of Valerian averaging 3.90 and 31 of Gallienus averaging 3.0; *ibid.* (1921, 63) gives one of Valerian at 3.90; *Num. Zeit.* (1893, 431) gives 10 of Valerian that average 3.20; 10 of the fourth year of Gallienus that average 3.20 and 10 others that average 3.63. *Viestnika* (*op. cit.*) gives 78 of Valerian and 67 of Gallienus that average 3.02 and 2.93 respectively; *Wiltshire Arch. and Nat. Hist. Magazine* 1937/38 gives one of Gallienus at 41 grains.

³⁶² *Bull. Archeol.*, 1932/33.

average of 138 coins of the two rulers from another hoard³⁶³ is 3.23 grams with a low of 1.9 and a high of 4.9 grams.

Sapor I, who ruled in Persia from A.D. 241 to 272, issued both gold and silver.³⁶⁴ His gold varied greatly in weight as may be seen from the following table:

Grains	Pieces
149	1
127	1
115	2
114	1
113	2
112	1
111	2
104	1

It is evident that these weights are more in keeping with the Roman gold of the first century than of the period of Valerian and Gallienus. In silver Sapor issued drachmae, half-drachmae and obols. Average weights are as follows:

	Number	Weight in grains
Drachmae	63	60.0
Half-drachmae	5	28.7
Obols	13	9.2

If one assumes that the gold unit was worth 25 drachmae, and that 113 or 114 grains was the weight

³⁶³ *Bull. hist. et scientif. Auvergne*, 1939, 56.

³⁶⁴ Babelon, *Traité* iii; Paruck; *Zeit. deutsch. morgenländ. Gesellsch.*, 1880. The coin suggested by Paruck as 1/8 drachma has been figured here as an obol.

162 GOLD AND SILVER STANDARDS

TABLE AJ

AUREI

		(a) Valerian				(b) Diva Mariniana				
		a		a		a		a		b
		Rome		Rome		Antioch		Milan	Lyons	Uncer- tain
		253/4	255	255/6	256/7	253	257	257	258	256
to	20									
	21									
	22									
	23				1					
	24									
	25									
	26									
	27									
	28									
	29				1					1
	30									
	31				1					1
	32			1	2					1
	33	1						1		
	34				1					
	35			1	1					1
	36			2	2					1
	37									1
	38								1	3
	39	1			2					
	40	1		1	1					
	41	2		1	2					2
	42	2							1	
	43	1		1		1				
	44	3		1						2
	45				1					1
	46			1		1				
	47			2						
	48	1								1
	49					1				1
	50			1		1				3
	51	1			1			1		
	52			1	2					
	53	1								
	54				1				1	1
	55									1
	56									
	57						1			1
	58	1								
	59									

TABLE AJ—*Continued*

Grs.	(c) Gallienus, joint (d) Salonina		(e) Valerian Caesar (f) Gallienus, sole							
	c	c	c	c	c	c	d	e	f	
	Rome	Rome	Rome	Asia	Milan	uncer-	all	all	all	
	253/4	254/5	255/6	256/7	257/8	256/8	257/8	tain		
to 20										36
21										1
22					1					4
23										7
24										5
25					1					2
26					1				1	2
27				1	1				1	2
28										
29				1	1					
30								1		3
31		1		1						2
32			1	1				2	1	5
33					1			2		1
34								2		1
35		2			1			1	3	3
36				1	3				2	3
37				1					2	1
38				2					1	2
39	1	1		1	1				1	2
40		1		1					1	1
41		1		1					1	2
42		1				1	1		2	3
43		3						2		1
44		3		1					1	3
45		1						1	1	1
46		1								3
47	1	2			3				1	3
48	1	2							1	
49								2		3
50								1		5
51	1	1								6
52						1				7
53								1		
54		2							1	6
55				1						3
56									2	4
57		2								2
58								1	1	2
59				2					1	1
										4

164 GOLD AND SILVER STANDARDS

TABLE AJ—Continued

(a) Valerian (e) Valerian Caesar
(c) Gallienus, joint (f) Gallienus, sole
(d) Salonina

Grs.	a Rome		a Rome	Uncer- tain	c Rome		d all	e all	f all
	253/4	255	256/7		253/4	254/5			
60									1
61						1		2	4
62	1			1			1	1	3
63			2						3
64					1	1		1	3
65							1		10
66									5
67				1			1		7
68									5
69				1					7
70									2
71									8
72									4
73									4
74							1		6
75									7
76									3
77	1	1							2
78									3
79									2
80	1							2	3
81									4
82						1			
83									6
84									2
86	1				1			1	
88									8
92									5
93									1
94									6
95									2
96									2
97									1
98									1
100	1								
101									3
102									
103									2
106									2
110									2

of the gold unit, then the ratio of gold to silver was about 1 : 13. This is in close agreement with the contemporary Roman ratio.

A papyrus of the year A.D. 260³⁶⁵ gives what is probably the earliest definite evidence for popular distrust of the subsidiary coinage: "Since the officials have assembled and accused the bankers of the Banks of Exchange of having closed them on account of their unwillingness to accept the divine coin of the emperors, it has become necessary that an injunction should be issued to all the owners of the banks to open them, and to accept and exchange all coin except the absolutely spurious and counterfeit, and not to them only, but to all who engage in business transactions of any kind whatever" This document, however, cannot be safely used to denote distrust of the imperial denarius or antoninianus. It would seem to apply only to the coins minted at Alexandria, for Egypt, in a monetary sense, was still a world by itself.

CLAUDIUS II

Whatever the system used by Gallienus, Claudius seems to have had other ideas. The fifteen coins for which weights are available, issued both by Claudius and in the name of his brother, range from 86 to 71 grains.³⁶⁶ Their average weight is 80 grains, indicating a basis of 60 to the pound, if indeed the number of coins is great enough to permit an opinion. The change from the apparent lack of

³⁶⁵ *P. Oxyrh.*, 1411.

³⁶⁶ Disregarding one whose authenticity is questioned.

166 GOLD AND SILVER STANDARDS

system under Gallienus is as complete as it is sudden.³⁶⁷ It is a curious fact that a few more weights can be found for aurei issued by Victorinus, who reigned in Gaul from A.D. 268 to 270, than for Claudius. Their distribution is as follows.³⁶⁸

Weight in grains	Number of coins	Weight in grains	Number of coins
72	2	82	1
73	1	83	2
74	1	85	1
75	4	87	2
78	2	93	1
79	2	97	2

These coins cover a slightly wider range than the aurei of Claudius and their average weight is slightly above that found for Claudius.

Homo³⁶⁹ says that the antoniniani struck by Claudius outside of Rome averaged 3.409 grams, while those struck in Rome averaged 3.067 grams, indicating, so he says, a cheating of about 10% by those running the mint at Rome. The coins minted at Rome contained from 1.7 to 2.4% of silver, those minted at Ticinum (not Tarraco as he says) from 2.5 to 2.7%, those minted at Siscia from 2.75 to 3%

³⁶⁷ Mickwitz, *Geld*, 58, applies the words "grosse Unordnung" to the coinage of Gallienus and Claudius. Apparently the term does not properly apply to Claudius.

³⁶⁸ Weights from BMC.; Bachofen Coll.; and *Rev. Num.*, 1889, 514. There seems to be a difference between the two mints operated by Victorinus.

³⁶⁹ *Aurelian*, 156; *Atti e Memorie* (1921, 63) gives 3 that average 3.70; *Num. Zeit.* (1893, 431) gives one at 3.35; *Willshire A. & NH.* (*op. cit.*) gives 42, 27, 40, 35.5 grains.

and those minted at Antioch about 8.75%. These variations, according to Homo, were the reason for Aurelian's attempt to correct the performance of the Roman mint.³⁷⁰ However, similar differences in the gold coins of Galba and Elagabalus imply no cheating and it may well be there is no idea of malfeasance here.

TABLE AK
CLAUDIUS II

Grains	Rome	Milan	Uncertain	Quintillus
71	1			
72	1			
75		1		
77				1
80			2	1
81	1			
82			1	
84	1			
85		1	1	
86		1	2	
94	1*			

* Perhaps a forgery.

AURELIAN

Because Aurelian made a serious effort to reform the currency as well as to correct alleged abuses in the mints, the dating of his gold coins is a matter of great importance.³⁷¹ It is unfortunate that it has not

³⁷⁰ Hammer, 104 gives one with 7.93, 4.22, two with 2.1, and one with 1.86% of silver. A tetradrachm from Alexandria shows 3.81% of silver; on p. 107 an antoninianus of Quintillus from Tarraco with 3, one from Rome with 2.3, one from Siscia with 2.9 and two from Cyzicus with 0.8% of silver; *Num. Zeit.* (1893, 431) shows variations from 3 to 13.1%.

³⁷¹ How much effect the gold captured in Palmyra had in bringing about the reform of the coinage system is unknown but it would seem to be of comparatively little importance.

168 GOLD AND SILVER STANDARDS

yet been satisfactorily done. Only ten coins are definitely dated to the pre-reform period, four from the Roman mint, six from the mint at Siscia. The Roman coins average 74 grains in weight, the Siscia coins 85 grains. The former are on the basis of 70 to the pound, the latter at 60 to the pound. This is not a satisfactory result for coins presumably contemporary, but the small number of coins may distort the result.

Three coins from the Roman mint marked TR P VII COS II, and therefore definitely assigned to the post-reform period, weigh 6.31, 6.52, and 6.63 grams, probably normal variations for a basis of 50 to the pound. The thirteen coins from the Milan mint, which seem to include two quinarii (or double trientes), apparently fall into two groups, one at 70 to the pound, the other at 60. The coins of Severina Augusta, whether from Rome or Antioch, are still heavier, with one exception all coming within the range of 50 to the pound.

The aurei of Tetricus, who ruled in Gaul from A.D. 270 to 275, have weights as follows:³⁷²

Weight in grains	Number of coins	Weight in grains	Number of coins
47	1	65	4
50	1	66	3
51	4	67	2
52	1	68	1
53	1	69	2
55	2	70	2

³⁷² Weights from BMC.; Naville Sale 17; Bachofen Coll.; E. T. Newell Coll.; *Rev. Num.*, 1889, 514.

Weight in grains	Number of coins	Weight in grains	Number of coins
56	2	71	3
57	2	72	4
58	2	73	1
59	3	75	1
60	4	77	1
61	4	78	1
62	1	79	1
63	1	119	1

About 40% of these coins are found within a range of 56 to 65 grains and only one weighs over 80 grains. Their average weight, therefore, is much lower than is the case with the coins of Aurelian. In this respect they differ from the coins of Postumus and Victorinus, which were heavier than the contemporary imperial coins.

Giesecke³⁷³ divides the gold coinage of Aurelian into three periods, corresponding to the three periods in the subsidiary coinage as described by Mattingly-Sydenham. The weights as given by Giesecke are as follows:

Period	Weight of Aureus	Ratio Gold to Silver
1	5.45 grams	1 to 7.82
2	4.36 grams	1 to 9.76
3	6.54 grams	1 to 6.50

The weight of the aureus at these respective periods does not seem supported by the weights

³⁷³ *Geldwesen*, 185.

170 GOLD AND SILVER STANDARDS

given in the present paper, while the decrease assumed for the second period does not seem logical. There is no evidence for the ratios between gold and silver that are given by Giesecke, and as a matter of fact there is no period in the Roman Empire when ratios as low as these are even probable.

Elmer³⁷⁴ suggests that at the time of Aurelian's monetary reform, the theoretical weight of the antoninianus was increased to 3.84 grams or to 1/84th of a pound, and of the denarius to 2.59 grams or to 1/126th of a pound. For this hypothesis, however, there seems no evidence.

The revolt of the mint employees at Rome³⁷⁵ is not discussed here because it has not yet been proved that it was due primarily to dishonest practices in the mint. Whether Aurelian's reform virtually demonetized the Gallic issues as suggested by Sutherland³⁷⁶ seems doubtful in view of the continued presence of those coins in late third century hoards.

The weights and analyses of Aurelian's antoniniani may be summarized as follows from the figures given by Rohde:^{376a}

³⁷⁴ *Verzeichnis*.

³⁷⁵ *Econ. Survey*, iv, 223 and Malalas, xii, 301 seem wrong in locating this revolt at Antioch; Zosimos (i, 61) says Aurelian minted "new silver" for the people. Sanders (*Amer. Jour. Archaeology*, 1924, 75) suggests a reading of "5 holokottinai" in a document he dates about A.D. 270 but this seems unlikely.

³⁷⁶ *Coinage and Currency in Roman Britain*, 69.

^{376a} Rohde, T. *Die Münzen des Kaisers Aurelianus*, 305 ff.

AVERAGE WEIGHTS

	Pre-Reform				Reform	
	Period I		II		III	
Mint	No.	Wt.	No.	Wt.	No.	Wt.
Spain	20	3.50	488	3.48	155	3.79
Gaul			2	2.60	2	4.11
Rome	12	3.17	22	3.80	118	3.69
Siscia	20	3.53	246	3.51	343	3.79
Serdica			62	3.55	97	3.59
Cyzicus	76	3.56	59	3.61	65	3.91
Antioch					40	3.84
Tripolis					9	3.73
Unknown			144	3.37		
Average	128	3.49	1023	3.49	829	3.77

ANALYSES

Percentages of Silver

	Period	II		III
Spain	8	3.14	4	4.475
Rome			3	3.83
Siscia	3	3.93	4	3.72
Serdica	1	2.85		
Cyzicus	2	3.95	2	3.75
Antioch			1	4.45
Unknown	4	3.27		
Average	18	3.37	14	4.02

While the average silver content is approximately $\frac{1}{2}\%$ higher in Period III than in Period II, the range of single coins varies from 4.40% to 2.80% in Period II and from 4.90 to 2.575% in Period III. Dattari gives the analysis of two undated coins as 3% silver, while Hammer gives nine analyses that vary from 5.8 to 0.98%.

172 GOLD AND SILVER STANDARDS

Grains	TABLE AL									
	AURELIAN AUREI									
	Rome pre	Siscia pre	Rome post	Rome n.d.	Milan	Lyons	Siscia post	Siscia n.d.	Antioch	Severina Rome
47					1					
54					1					
57								1		
61								1		
64	1				1	1		1		
67								1		
69					1			1		
70								2		
71	1								1	
72										
73					1					
74								3		
75					1			2		
76	1				2					
77								1	2	
78								1	3	
79									1	
80								3	1	
81		3						1	1	
82					1				2	
83									1	

TABLE AL—Continued

Grains	Rome pre	Siscia pre	Rome post	Rome n.d.	Milan	Lyons	Siscia post	Siscia n.d.	Antioch	Severina Rome	Siscia
84								1	2		
85	1				2				1		
87		1						1			
88		1						1			
89									2		
92								1			
94		1			1			1	1	1	
95											
96					1			1			
97			1							1	
98			1					1			1
99						1					
100			1							1	
101										1	
102			1								
103								2			
105								1			
109								3			
115											1
118								1			
119								2			
120/130								5			

174 GOLD AND SILVER STANDARDS

The gold and silver coins issued in Persia³⁷⁷ may be classified as follows:

Gold struck by Varahran I (A.D. 272/276)

Grains	Number
224	1
112	2
110	1

The silver occurs in three denominations:

	Hormisdas (A.D. 272)		Varahran I	
	Average		Average	
	Number in grains		Number in grains	
Drachma	1	67	14	61.4
Half-drachma	1	29	1	28
Obol			2	8.3

TACITUS

Considering the shortness of his reign, there is a surprising number of coins extant bearing the name of Tacitus: nine from Gallic³⁷⁸ mints, eight from the Roman mint, and thirty-eight from the mint at Siscia. The coins from the Gallic and Roman mints seem to be on the basis of 70 to the pound, with one coin that may be either a $1\frac{1}{3}$ or a $1\frac{1}{2}$ aureus piece. The coins from the mint at Siscia do not fall readily into any single standard and have no noticeable point of concentration, although they seem to indicate a basis of 60 to the pound.

The coins of Florianus seem to fall into two groups; those from the mint at Ticinum on the

³⁷⁷ Babelon; Paruck; *Zeit. deutsch. morgenländ Gesellsch.*, 1880.

³⁷⁸ Either Lyons or Arles but not Cologne.

TABLE AM

TACITUS AUREI

Grs.	Gaul	Rome	Siscia	Tici- num	Anti- och	Florianus Cyzicus	Rome	Tici- num
63			1					
64			2	1				1
66		1						2
67	1		1					
68	1		2					
69	1		1					1
70		1						1
71	1	2	2		1			2
72	3	1	1					
73		1	1					
74	1		2	1				
75			3					
76			2	1				
78			1					
79			2					
80		1	1					
82			1					
83			1	1				
84			1					
87		1						
90				1				
91							1	
92				1				
96			3	1				
97			1					
98			4					
99			1			2	1	
101							1	
102	1		1	1				
103			1					
107			2					

basis of 70 to the pound; the few from Rome and Cyzicus that are definitely heavier and that seem to be on the basis of 50 to the pound, unless they are to be considered as $1\frac{1}{3}$ or $1\frac{1}{2}$ aureus pieces.

176 GOLD AND SILVER STANDARDS

Weights of the antoninianus are rare.³⁷⁹ Sixteen coins from one hoard³⁸⁰ average 63.26 grains (4.10 grams).

PROBUS

The 144 gold coins of Probus show two distinct points of concentration when arranged by weights. The first is around 80 to 82 grains, the second around 98 grains. The four light weight coins from the Roman mint are apparently quinarii on the basis of 60 to the pound, judging them by their average weight, but if judged individually one is on the basis of 50 to the pound. These are the two bases indicated by the distribution of weights of the coins considered to be aurei.

Two hundred and ten antoniniani have an average weight of 57.5 grains (3.73 grams).³⁸¹ The silver content³⁸² varies from 5.2 to 2.24%, with an average from ten analyses of 3.12%.

It is interesting to note, in view of the apparent increase in weight of the aureus, that contemporary documents from Egypt give the first evidence extant of a pronounced increase in prices. A lease of the year A.D. 280 records the rental of a store room which is at a figure approximately thirty times as

³⁷⁹ Bernhart (*Mitteil. Bay. Num. Gesellsch.*, xxix, 1911) gives a quinarius at 2.24 and a denarius of Florianus at 3.2 grams. Hammer, 107 gives one coin each with 5.9, 4.9, 4.4% of silver.

³⁸⁰ *Alli e Memorie*, 1921, 63.

³⁸¹ Bernhart (*op. cit.*), gives 3.6, 4.18, 3.4, 5.48, 5.35, 3.3, 3.57, 4.0, 4.54, 3.25, 3.68, 4.35, 2.95, 4.05, 4.0, 3.91, 4.51, 4.34, 4.46 and a possible quinarius at 2.7 grams.

³⁸² Hammer 107 gives four with 5.2 and one each with 4.4, 3.82, 3.76, 3.4, 3.22, 2.24% of silver.

TABLE AN
PROBUS AUREI

Grains	Rome	Tici- num	Lyons	Siscia	Serd- ica	Cyzicus	Anti- och	Uncer- tain
30	1							
35	1							
40	1							
49	1							
73			1					
74	1				1			
75				1				
76	1		1					
78							1	
79			1	1				
80	1		1	1	2	2	1	
81		1		1		1		
82			1	2		3		
83	1	1		1	1			
84			1		1	1	2	
85	2		1					
86						1		
87				1		1	1	
88				1				
89	1			1				
90	2			1	1		1	
91	2			2				
93	2	1		1	1			
94				1				
95	2						1	
96	1	1	1	2			4	
97		3	2	1				1
98	2	1		4			2	1
99		1		3	1	2	1	
100	2	2		1		1		
101	2					1	1	
102			1			2	1	
103	1							
104	1	1	1		2		1	1
105			1	4				
106	2	1		1				
108								
109				1	1			
111				1			1	
114				1				
115				2				
117	1							
120/130	1			3				

great as the rental for the identical room twenty-one years earlier.³⁸³ Unfortunately no European prices for this period are preserved.

CARUS AND CARINUS

The aurei issued by Carus and the various members of his family may be divided into three groups. Group "A" includes the coins of Carus, of Carinus as Caesar, and of Magnia Urbica; Group "B" includes the coins of Carinus as Augustus and of Numerianus as Caesar; Group "C" includes those of Numerianus as Augustus. The letter "N" refers to the number of coins; the letter "W" to the average weight of that particular group.

Mint	Group A		Group B		Group C	
	N	W	N	W	N	W
Rome	35	71	33	80	23	82
Ticinum	6	70	2	79	2	81
Siscia	45	71	26	76 ³⁸⁴	6	73
Lyons	13	69	2	73		
Cyzicus	17	71	6	72	5	75
Antioch	6	77	7	71	2	71
Uncertain	11	71 ³⁸⁵	4	75	6	80

The coins in groups "B" and "C" are later in date than those in Group "A", and it is interesting to note that the later coins are, with the exception of those minted at Antioch, uniformly heavier than the earlier ones. It would appear that Carus struck at

³⁸³ *P. Giess*, 50; *P. Flor.*, 63.

³⁸⁴ Omitting one of 105 and one of 95 grains.

³⁸⁵ Not counting one quinarius.

TABLE AO

AUREI

Grs.	(a) Carus				(b) Carinus Caesar			
	a Rome	a Tici- num	a Lyons	a Siscia	a Cyzi- cus	a Anti- och	a uncer- tain	b Rome
44							1	
56								2
59								
61			2	1				
62					1			1
63								
64				2				1
65			3	3				
66				4	1			
67	1		1	1				
68		1	1		1	1	3	1
69	1	4	1	2	2		2	
70							1	
71				1	3	1	2	
72			1	1		1		
73		1	1	3	1	1	1	
74				2				1
75				1				1
76	1			1				
77	1			1			1	
78								
79				3				
80								1
81				2				
82				1	1			
83			1		2			
84								
85								
86								
87								
88								
89								
90								
91								
92								
93								
94								
95								
96								
101								

180 GOLD AND SILVER STANDARDS

TABLE AO—*Continued*

Grs.	(b) Carinus Caesar				(c) Carinus Augustus			
	b Lyons	b Cyzi- cus	b uncer- tain	b Siscia	b Antio- och	c Rome	c Tici- num	c Lyons
44								
56								
59								
61								
62				1				
63				1				
64				1				
65								
66				1				
67								
68	1	1					1	
69		2		1		3		
70		1				2		
71						3		
72		1		1				
73						1		
74				2		1		
75			1			2		1
76						2		
77						3		
78	1					1		
79								
80						1		
81								
82						2		
83						2		
84				2				
85				1				
86					2			
87						1		
88						1	1	
89						2		
90				1		1		
91						1		
92								
93						2		
94				1		1		
95								
96								
101						1		

TABLE AO—*Continued*

(c) Carinus Augustus (d) Magnia Urbica (e) Numerianus Caesar

Grs.	c Siscia	c Cyzi- cus	c uncer- tain	d Rome	d Siscia	e Lyons	e Siscia	e Cyzi- cus
44								
56								
59								
61		1						
62				1				
63					1			
64								
65	1			1				
66								
67	3			1				
68								
69				2				1
70	1			1		1		
71	3	1		1				
72		1	1	3				1
73	2							
74	1		1	4				
75			1	2			1	
76	1			3			1	
77	2							
78					1			
79	1		1	1				
80								
81		1						
82								
83								
84								
85								
86								
87	1			1				
88	1							
89								
90	2							
91								
92	1							
93								
94	1							
95								
96								
101								

182 GOLD AND SILVER STANDARDS

TABLE AO—*Continued*

Grs.	(e) Numerianus Caesar				(f) Numerianus Augustus		
	e	f	f	f	f	f	f
	Antioch	Rome	Ticinum	Siscia	Cyzicus	Antioch	Uncer- tain
44							
56							
59	1						
61							
62							
63							
64							
65							
66		1					
67	1				1		1
68				1	2		
69		1		1			
70				1	1	1	
71	1					1	
72	1			1			1
73	1			1			
74							
75	1	1					
76							
77		3					
78		1					
79		3					
80		1					
81		1	2				1
82				1			1
83	1	1					
84		3			1		
85		2					1
86		1					
87							
88							
89							
90		2					
91							
92							1
93							
94							
95		1					
96		1					
101							

70 to the pound, while Carinus attempted to strike at 60 to the pound.

Weights of the antoniniani of Carus, Numerianus and Carinus are seldom recorded. Twenty-four of Carus average 57.86 grains (3.75 grams); forty-five of Numerianus 59.41 grains (3.85 grams); sixty-five of Carinus 61.10 grains (3.96 grams)³⁸⁶ giving a combined average of 59.95 grains (3.89 grams). An analysis of one coin of Carinus shows 5% of silver.³⁸⁷

DIOCLETIAN

In his excellent study of the gold coinage of this period Pink has classified over 300 coins issued by Diocletian in his own name according to mints and dates. Table AQ has been made in accordance with the classification adopted by Pink. The results of that table may be conveniently shown by the summary on pp. 184-5, from which coins that are clearly fractional pieces have been omitted. The number of coins is indicated by "N", while the average weight in grains is indicated by "W".

Several noteworthy phenomena appear in the coinage of Diocletian. Coins weighing between 100 and 130 grains disappear with but one exception, that coin weighing 101 grains.³⁸⁸ Of far greater importance, is the evidence that there was a change in basic standards not later than A.D. 286. One hundred and

³⁸⁶ Bernhart, *Mitteil. Bay. Num. Gesell.*, 1911; *Atti e Memorie*, 1921, 63.

³⁸⁷ Hammer, 107.

³⁸⁸ This is not true of the coinage of Diocletian's three associates. Their coins weighing over 100 grains are fairly common although they are not listed in the table if they weigh over 104 grains.

184 GOLD AND SILVER STANDARDS

twenty-seven coins from the mints at Rome, Cyzicus, Lyons, and Antioch dated in the years 284 to 286 show an average weight of 71 grains, indicating a basis of 70 or 72 to the pound. Twenty-seven coins

Date	Mints at											
	Rome		Ticinum		Aquileia		Lyons		Carthage		Treves	
	N	W	N	W	N	W	N	W	N	W	N	W
284/6												
285/6	20	70 ³⁸⁹					9	69				
286												
286/7	23	83					1	81				
286/8			4	79								
286/9												
287	1	91										
287/9												
288/93	51	82										
290												
290/2												
293	10	82									22	84
293/99			1	101								
294												
294/5											4	81
294/99	7	81										
295/6											6	81
296/7									1	88		
296/99					10	82					6	78
297/8												
299/02												
300/2												
302/3											7	82
303			3	82	6	81			1	79	16	82

from the mint at Cyzicus dated in A.D. 286, twenty-three from the mint at Rome dated A.D. 286/7, and at least ten each from the mints at Siscia and Antioch dated in A.D. 286/89 all show average weights of 82 or 83 grains, indicating a basis of 60 to the

³⁸⁹ Omitting three quinarii.

pound. No later group containing five or more coins varies more than 5% from this average, except one dated A.D. 296/99 from the mint at Treves.

Of the 526 coins appearing in the tables, only five

	Thessa- lonica		Nico- media		Siscia		Cyzicus		Antioch		Alex- andria	
	N	W	N	W	N	W	N	W	N	W	N	W
284/6							67	71	31	71		
285/6												
286					1	83	27	82				
286/7												
286/8												
286/9					12	83			10	82		
287												
287/9							6	82				
288/93												
290									10	80		
290/2					3	78	35	83	23	82		
293							17	83				
293/6									9	82		
293/99					10	83						
294							10	83				
294/5												
294/99												
295/6			7	82								
296/7												
296/99												
297/8									7	80	2	81
299/302									6	79		
300/02	7	81										
302/3												
303			3	83	2	83						
304/5					2	78						

percent show weights that are within ten percent of the theoretical weight of coins on the basis of 50 to the pound; too few, it seems, to justify the conclusion that they were intentionally struck on that basis. This seems to mean that there is nothing in

the tables to justify statements that the aureus in A.D. 301 was on the basis of 50 to the pound,³⁹⁰ however attractive the relationship of that basis to the statement in the Edict on Prices which fixes the value of a pound of gold at 50,000 denarii. It seems reasonable to assume that this valuation of gold was not an exception to the general statement that all articles in the Edict were underpriced.

Apparently there is also nothing in these tables to indicate that Diocletian changed the weight of the aureus five times, as Seeck first suggested.

About A.D. 294 Diocletian brought out a good silver piece of the same weight as the denarius of Nero.³⁹¹ This is the piece generally known as the argenteus. Mickwitz³⁹² gives the average weight of 560 of these good silver pieces as 3.09 grams. Using the ratio of twelve and one-half silver pieces to the aureus, and the theoretical weight of both the aureus and the argenteus, Giesecke³⁹³ finds a ratio between gold and silver of 1 : 7.8. But if one assumes that the aureus was worth twenty-five silver pieces,

³⁹⁰ So Giesecke, *Geldwesen*, 185. Pink (*Num. Zeit.*, 1930, 37) believes that Diocletian issued no gold on the basis of 50 to the pound.

³⁹¹ Hammer, 107 gives three analyses of pre-reform coins, one each with 4.5, 2.0 and 1.5% of silver. On p. 112 an Alexandrian tetradrachm shows 1.81% of silver. One post reform coin shows 94.3% of silver. For silver issues of Diocletian see particularly *Num. Zeit.*, 1930.

³⁹² *Systeme*, 42. One in Princeton weighs 2.56 grams. Pink (*Num. Zeit.*, 1930, 38) says that the silver was struck *al marco* and that the weights vary from 2.2 to 4.4 grams, the majority being found between 2.9 and 3.6 grams.

³⁹³ *Antikes Geldwesen*, 222; *CR. Acad. Inscript.* (1925, 68) gives the ratio as 1 : 13 for Diocletian; Pridik (*Num. Zeit.*, 1929, 67) believes 1 : 13.02 is correct.

and uses the actual average weights of the two coins, one finds a ratio between gold and silver of about 1 : 14.4.

Just what Diocletian's system of coinage was remains a problem. Three attempts at interpretation are summarized here:

- 1 aureus—12½ argentei³⁹⁴—100 sesterces—250 folles—double denarii—1000 denarii communes, according to Giesecke, or
- 1 aureus—20 argentei—500 folles—2000 centenionales, according to Bernhart, or
- 1 aureus—20 argentei—40 folles—160 radiate coins—400 small bronzes—800 denarii, according to Mattingly-Sydenham.

Mickwitz works out a system: 1 pound of gold—2000 argentei—50,000 denarii, but this involves a practically impossible relationship between the aureus and the argenteus, if the former was struck at 60 to the pound.

The important point about this monetary reform was the introduction of a good silver coin, and its definite relationship to the aureus, even though today that relationship does not seem to be definitely known. However, the inference from the gold and silver ratio which appears here makes it probable that the aureus was worth 25 argentei. The monetary uncertainties preceding Diocletian's attempt at reform had been marked by a great increase in the volume of circulation and by the disappearance of all

³⁹⁴ Heichelheim (*Symb. Osloenses*, xiv, 85) thinks that P. Oslo, 83 shows this relationship but unless one reads into the papyrus something it does not say this is not true.

stability in prices. The world needed reliable coins of gold and silver, and these Diocletian provided. The weak point in his reform was an apparent deficiency in the supply of good silver and the silver-washed subsidiary coinage which was tarified too high in relation to the good coins. This weakness resulted in rising prices, which Diocletian tried to control by his Edict on Prices. Diocletian's reform was short-lived,³⁹⁶ but it laid the base on which Constantine was later to build his lasting system.

The preceding tables have disregarded the gold coins struck by the three men associated with Diocletian in the government. It is apparent that Diocletian had already changed the gold standard before Maximian became Augustus in A.D. 286. The following table shows Diocletian's coinage after the change in weights, and the coinage of Maximian and of the two Caesars. The uniformity of the coinage is evident, though the accuracy of the minting is not what might be expected. In the case of Diocletian 60.2% of the coins fall within a range of 80 to 84 grains, while in the case of the associate rulers, 56½% fall within the same range.

Something should be said about the contemporary coinage of Carausius in Britain. Mattingly³⁹⁶ gives the average weight of his aureus as 67.3 grains (4.36 grams). Eight coins found in other collections average 70 grains.³⁹⁷ Both indicate a standard of 70

³⁹⁶ Thus Mattingly (*Roman Coins*, 223) says hardly any silver was struck between A.D. 307 and 340 although the siliqua was introduced in the West in A.D. 312.

³⁹⁶ *Roman Imperial Coinage.*, v, 2, 436.

³⁹⁷ Hirsch, *Sales* 24, 30; Naville, *Sale* 17; *Num. Chron.*, 1907, 156; E. T. Newell Coll.

Weight in grains	Diocletian after 286	The Associates
67	1	
68		2
69	1	3
70	2	3
71	2	1
72	2	1
73	3	1
74	5	9
75	7	7
76	10	12
77	19	21
78	16	4
79	10	25
80	34	52
81	47	21
82	35	84
83	68	12
84	40	72
85	16	29
86	11	16
87	7	10
88	7	12
89	2	4
90	5	6
91	7	5
92	2	4
93		1
94	1	3
95	1	
96	1	2
97	5	2
99	3	2
100	1	4
101	1	1
102		2
103		1

190 GOLD AND SILVER STANDARDS

to the pound, badly adhered to. This standard is curious in view of the fact that Diocletian's coinage had been definitely changed to 60 to the pound before Carausius began to strike gold.

Carausius also issued a silver coin of good quality, though apparently none has ever been scientifically analyzed.

In Persia three rulers struck gold and silver during the reign of Diocletian:³⁹⁸ Varahran II (A.D. 276/293), Varahran III (A.D. 293) and Narses (A.D. 293/302). The coinage of the successor to Narses, Hormisdas II, is left for discussion in connection with that of Constantine. The gold coins show weights as follows:

Grains	Varahran II	Varahran III	Narses
115	1		1
114	1		1
113	3		1
112	3		
111	4	2	1
110	1		
109	1		
105			1
102	1		
21	1		

Silver coins were issued in denominations of one drachma, half drachma and obol. Average weights are as follows:

³⁹⁸ Paruck; Babelon; *Zeit. deutsch. morgenl. Gesellsch.*, 1880.

	Varahran II		Varahran III		Narses	
	No.	Average	No.	Average	No.	Average
Drachma	50	60.5	3	60.7	21	58.0
Half-drachma	5	29.9				
Obol	12	9.0			3	8.0

Table AP, which follows, is an attempt at an analysis of the hoards of silver coins buried after the death of Alexander Severus and before A.D. 305. Before A.D. 215, of course, all the coins are denarii, after that the distinction between denarii and antoniniani has not always been sufficiently recorded to make a separation of the two coins possible. Especially noteworthy is the almost complete disappearance of pre-Valerian coins in the hoards buried under Aurelian and later.

A document³⁹⁹ which the editors believe should be dated to a period just before A.D. 296 may throw additional light on the currency difficulties of the times: "Dionysius to Apion, greeting. The divine fortune of our masters has ordained that the Italian coinage (*nomisma*) be reduced to the half of a *nummus*. Make haste, therefore, to spend all the Italian silver that you have on purchases, on my behalf, of goods of every description at whatever price you find them. For this purpose I have dispatched an officialis to you. But take notice that

³⁹⁹ P. Rylands, *Inv.*, 650 in *Trans. Intern. Numis. Congress*, 1936, 246. "Coinage" is a translation of the Greek word *nomisma*, while "silver" is a translation of the Greek *argyrion*. For other uses of "Italian money" see *Stud. Pal.*, xx, 85. Heichelheim thinks "Italian coinage" in the present papyrus refers to gold and that the papyrus indicates a doubling of the gold piece in terms of the denarius.

192 GOLD AND SILVER STANDARDS

TABLE AP

SILVER HOARDS OF THIRD CENTURY⁴⁰⁰

	Maximinus	Gordian III	Philip	Decius	Trebonianus Volusianus	Valerian	Gallienus
Diocletian							
British							
Carinus							
Carus							
Probus							
Florianus							
Tacitus							
Aurelian							
Tetricus							
Claudius							
Victorinus							
Gallienus							3900
Postumus							1665
Valerian						109	1820
Aemilianus						1	124
Volusianus					32	33	1643
Trebonianus					80	33	2614
Decius				1671	1143	73	5712
Philip			267	522	813	229	12334
Gordian III		60	332	1025	925	278	15473
Balbinus etc.		4	7	28	2	3	108
Gordian I, II		2		2			3
Maximinus	122	115	16	1867	55	26	86
Alexander	574	269	460	9033	101	853	378
Elagabalus	458	142	283	6344	128	216	471
Macrinus	115	14	8	440		58	13
Caracalla	813	182	97	6525	38	2233	245
Septimius	1061	361	233	13640	63	3089	197
Albinus	7	5	2	200		5	4
Didius	2			16			
Pertinax	6	2		57		1	
Commodus	125	175	10	3749	6		6
Marcus	231	354	8	13838	4	8	
Pius	220	271	2	12200	3	2	1
Hadrian	113	140		6689			
Trajan	62	66		5234			
Nerva	6	7		323	1		
Domitian	33	6		633	1		
Titus	22	5		445			
Vespasian	48	35	1	1731			
Vitellius	4	1		134			
Otho		1		47			
Galba	1	2		50			
Nero	6	2		102			
Republic				29			
Totals	4029	2221	1726	86574	3395	7251	46797

TABLE AP—Continued

	Claudius	Aurelian	Tacitus	Probus	Carus	Diocletian
Diocletian						6700
British						903
Carinus						3809
Carus					1	1322
Probus				5		13499
Florianus			1			576
Tacitus			1			2937
Aurelian		659	1037	62		11791
Tetricus		11334	236	4276	26	16955
Claudius	137	8075	1055	2789	23	13453
Victorinus	2631	2783	107	686	10	5633
Gallienus	1348	7030	1229	2627	36	12796
Postumus	1652	2426	23	52	11	472
Valerian	841	281	16	1	2	86
Aemilianus	5					1
Volusianus	188		2			5
Trebonianus	269	3			3	13
Decius	220	2				15
Philip	368	2			1	29
Gordian III	371	5				47
Balbinus etc.						
Gordian I, II						
Maximinus	3					5
Alexander	39					30
Elagabalus	11	1				28
Macrinus						1
Caracalla	4					13
Septimius						12
Albinus						
Didius						
Pertinax						
Commodus	9					
Marcus	8					1
Pius	5					
Hadrian	1					
Trajan						
Nerva						
Domitian						
Titus						
Vespasian	1					
Vitellius						
Otho						
Galba						
Nero						
Republic						
Totals	8111	32601	3707	10498	113	91132
Grand Total						298155

should you intend to indulge in any malpractices I shall not allow you to do so."

The editors, Roberts and Mattingly, believe that the coin here being devalued⁴⁰¹ is the XX.I piece of Aurelian and his successors and that the eagerness to spend it, evidenced by this papyrus, may be one of the reasons which led to the great increase in prices that Diocletian sought to regulate by his Edict on Prices.

⁴⁰⁰ The hoards used to form Table AP are as follows:

Maximinus: Cologne 1909; Wachtendonk; Marienfels; Niederaschau.

Gordian III: Compiègne; Stellata; Chesterfield; Müttersholz; Preselles.

Philip: Nicolaëvo; St. Quentin; *Num. Chron.*, 1897, 119.

Decius: Rutschuk; Reka Devnia; Plevna; Baden; Brickendonbury; Kingersheim.

Trebonianus: Serbia; Metz 1889; Sablon; Glibovoc; Jagodine.

Valerian: Niederbieber (two); Poole Harbor; Edlington; Hamaide Wodecq; Limoges.

Gallienus: Paris; Rouen; Dorchester; Marcilly; Clermont; Turin; Baalen; Schwarzenacker; Testaccio; Xanten; Mürlenbach; Vinay; Mainz; Poppelsdorf; Garcina; Smederevo; Jublains; Wallers; Chalandry; Couvron; Eu; St. Brieuc.

Claudius: Selsey; Akkerwoude; Castellato Stura; Nagyberki; Orenhofen; Orscholz; Trier 1898.

Aurelian: Saboc; Upton; Linwood; Blackmoor; Baconsthorpe; Arona; Ham Hill; Long Wittenham; Forchheim; Cattenes; Fossana; Heddernheim; Metku; E. T. Newell; Allex; Fins d'Annecy.

Tacitus: Sillingy; Cordiere.

Probus: Fins d'Annecy.

Carus: Swenningen.

Diocletian: Caruiff; Blackmoor; Venera; Colchester; Linchmere; Antioch of Pisidia; Egypt 1888, Ettelbrück 1889; Treviglio; Nieder Rentgen; Dambel.

⁴⁰¹ The editors say that the appearance of X.I on coins of Tacitus and Carus is evidence of previous attempts to reduce the nominal value of the XX.I piece.

An indication of difficulties brought about by an increase in the value of coins is to be seen in a Talmudic quotation given by Heichelheim:⁴⁰² "One may not redeem with coinage which is not in circulation . . . Raba asked R. Hisda: 'What if a man has made a loan in coinage which later increases in value?' He answered: 'The borrower shall give him the coinage in circulation'."

There are a few contemporary references to the gold and silver coins. A section of Justinian's Code mentions aurei.⁴⁰³ The Edict on Prices uses the denarius as its monetary unit while a papyrus⁴⁰⁴ of A.D. 286/293 mentions "silver money." A papyrus which possibly belongs to the time of Diocletian⁴⁰⁵ speaks of the payment of the crown gold tax in grammata of gold. After the time of Diocletian the word "denarius" when found in Egyptian papyri⁴⁰⁶ often means "drachma."

A letter written in A.D. 296⁴⁰⁷ instructs the recipient to "make anklets for my daughter" out of three *holokottinoi*. Of greater interest, another document of A.D. 293 mentions a sum of 820 plus sesterces.⁴⁰⁸ This is apparently the last non-literary reference to this coin that is now extant.

⁴⁰² *Econ. Survey*, iv, 218, note 40; Bab Baba Quamma, 97b.

⁴⁰³ iv, 57, 6.

⁴⁰⁴ P. Oslo, 135.

⁴⁰⁵ PBM., 966. The date is uncertain.

⁴⁰⁶ As P. Oxyrh., 1104 (A.D. 306). Perhaps also Viereck, *Gk. Ost.*, 167; P. Oxyrh., 1718.

⁴⁰⁷ Winter, *Misc. Papyri*, 218 (A.D. 296).

⁴⁰⁸ Grenfell, *New Class. Frag.*, ii, 110 (A.D. 293).

196 GOLD AND SILVER STANDARDS

TABLE AQ
DIOCLETIAN AUREI

Grains	285/6	Rome				Ticinum				Aquileia	
		286 287	287 288	288 293	293 299	286 288	293 299	299 303	296 299	303	
26				1							
34	2										
35	1			2						1	
36											
38											
43											
48											
58							1				
59	1										
60											
62											
63	2										
64											
65											
66	1										
67											
68	2										
69	3										
70	2										
71	1	1			1						
72						1					
73	1	1		1							
74	2										
75				1		1					
76	1	2		3			1		1		
77		2		3	1	1					
78				2			1				1
79				2	1						
80		2		2					3	1	
81	2	3		6	3	1	2			2	
82	1			7	1					1	
83		2		8		1			1	6	1
84				2						1	
85		2		2	1						
86		2		2	1	1					
87		2		3	1						
88	1	1		3					1		
89				1							
90						1					
91		1	1	1							
92				1							
94				1							
95											
96											
97		2									
99											
100											
101								1			

TABLE AQ—Continued

Grs.	Lyons		Carthage		Treves					Thessa-	Nicomedia	
	285 286	286 287	296 297	303	293	294 295	295 296	296 299	302 303	303	lonica 300 302	295 on 303
26												
34												
35												
36												1
38				1								
43												
48												
58												
59												
60												
62	1											
63												
64												
65												
66	1											
67	1						1					
68	2											
69	1											
70												
71	1											
72												
73												
74	1				1							
75								2		1		
76					1							
77	1				2	1		2	1	2		
78					1	1					1	
79				1				1		1		
80					1		1		1	2	1	1
81		1			2				1	4	1	4
82							1				1	2
83					6	1	2		1	2	2	1
84					2			1	1	2	1	
85						1			1			
86					2				1			
87												
88			1									
89												1
90					1							
91					1		1			2		
92												
94												
95												
96												
97					1							
99												
100					1							
101												

35
N9
JAN 7 1942

NUMISMATIC NOTES
AND MONOGRAPHS

No. 95



THE SILVER DOLLARS
OF
THE UNITED STATES OF AMERICA

BY
ARTHUR D. McILVAINE

THE AMERICAN NUMISMATIC SOCIETY
BROADWAY AT 156TH STREET
NEW YORK
1941

PUBLICATIONS

The American Journal of Numismatics, 1866-1920

Monthly, May, 1866-April, 1870.

Quarterly, July, 1870-October, 1912.

Annually, 1913-1920.

With many plates, illustrations, maps and tables. Less than a half-dozen complete sets of the Journal remain on hand. Price on application.

The numbers necessary to complete broken sets may, in most cases, be obtained. An index to the first fifty volumes has been issued as part of Volume LI. It may be purchased separately for \$3.00.

The American Numismatic Society. Catalogue of the International Exhibition of Contemporary Medals. March 1910. New and revised edition. New York. 1911. xxxvi, 412 pages, 512 illustrations. \$3.00.

Numismatic Notes and Monographs

14. George F. Hill. Attambelos I of Characene. 1922. 12 pp. 3 pls. \$1.00.
15. M. P. Vlasto. Taras Oikistes (A Contribution to Tarentine Numismatics). 1922. 234 pp. 13 pls. \$3.50.
17. Agnes Baldwin. Six Roman Bronze Medallions. 1923. 39 pp. 6 pls. \$1.50.
18. Howland Wood. Tegucigalpa Coinage of 1823. 1923. 16 pp. 2 pls. 50c.
19. Edward T. Newell. Alexander Hoards—II. Demanhur Hoard. 1923. 162 pp. 8 pls. \$2.50.
20. Harrold E. Gillingham. Italian Orders of Chivalry and Medals of Honour. 146 pp. 34 pls. \$2.00.
21. Edward T. Newell. Alexander Hoards—III. Andritsaena. 1924. 39 pp. 6 pls. \$1.00.
22. C. T. Seltman. A Hoard from Side. 1924. 20 pp. 3 pls. \$1.00.
23. R. B. Seager. A Cretan Coin Hoard. 1924. 55 pp. 12 pls. \$2.00.
24. Samuel R. Milbank. The Coinage of Aegina. 1925. 66 pp. 5 pls. \$2.00.
26. Edward T. Newell. Mithradates of Parthia and Hyspaosines of Characene. 1925. 18 pp. 2 pls. 50c.
27. Sydney P. Noe. The Mende (Kaliandra) Hoard. 1926. 73 pp. 10 pls. \$2.00.
28. Agnes Baldwin. Four Medallions from the Arras Hoard. 1926. 36 pp. 4 pls. \$1.50.
29. H. Alexander Parsons. The Earliest Coins of Norway. 1926. 41 pp. 1 pl. 50c.
30. Edward T. Newell. Some Unpublished Coins of Eastern Dynasts. 1926. 21 pp. 2 pls. 50c.
31. Harrold E. Gillingham. Spanish Orders of Chivalry and Decorations of Honour. 1926. 165 pp. 40 pls. \$3.00.

NUMISMATIC
NOTES AND MONOGRAPHS

NUMBER 95

NUMISMATIC NOTES AND MONOGRAPHS
is devoted to essays and treatises on subjects relating to coins, paper money, medals and decorations and is uniform with Hispanic Notes and Monographs published by the Hispanic Society of America, and with Indian Notes and Monographs issued by the Museum of the American Indian—Heye Foundation.

PUBLICATION COMMITTEE

AGNES BALDWIN BRETT, *Chairman*

STEPHEN H. P. PELL

THOMAS O. MABBOTT

EDITORIAL STAFF

SYDNEY PHILIP NOE, *Editor*

SAWYER MCA. MOSSER, *Associate Editor*

THE SILVER DOLLARS
OF
THE UNITED STATES OF AMERICA
WITH
A SHORT SKETCH
OF
THE 1804 DOLLARS

BY
ARTHUR D. McILVAINE



THE AMERICAN NUMISMATIC SOCIETY
BROADWAY AT 156TH STREET
NEW YORK
1941

COPYRIGHT 1941 BY
THE AMERICAN NUMISMATIC SOCIETY

RUDNILL AND SMITH COMPANY, LANCASTER, PA., U. S. A.

THE SILVER DOLLARS
OF
THE UNITED STATES OF AMERICA

BY ARTHUR D. MCILVAINE

* *
*

FOREWORD

NO apology need be offered in introducing a subject as important as that of our own National Coinage—or even this one class of coins . . . the Silver Dollar.

The apology comes with the writer's realization of his inadequacy to do more than a small measure of justice to so worthy a subject. Perhaps this present attempt will stimulate another who would be more competent to seize the full value and the far perspective of the topic and present it in its fullest significance.

Presented here are results of the writer's twelve-year investigations of Mint Records and Congressional publications . . . studies of many collections, including his own . . . examinations of auction catalogs . . . and a vast amount of reading at libraries including that at The American Numismatic Society where always there was found sympathetic under-

standing and real helpfulness in pursuit of facts. It is, therefore, a pleasure to acknowledge obligation to Sydney P. Noe, Secretary of the Society; and to Sawyer McA. Mosser, Librarian, for their advice and assistance.

Acknowledgment is made also to the Office of the Director of the Mint, Washington . . . the Superintendent of the Mint, Philadelphia . . . the National Museum, Washington . . . and Mr. F. C. C. Boyd for general information on our coinage of Silver Dollars; and to the Massachusetts Historical Society . . . the Omaha Museum . . . Mr. Farran Zerbe . . . Mr. William C. Atwater, Jr. . . . Mr. Wayte Raymond . . . the Chase National Bank . . . and Mr. B. Max Mehl for specific information on the various 1804 Dollars. To my friend and fellow numismatist Don Graf I am indebted for the excellent photography of all the coins illustrated excepting only the 1804 Dollars which were obviously not available.

Arthur D. McIlvaine

New York, August 1941

THE SILVER DOLLARS OF THE UNITED STATES OF AMERICA

* *
*

Our United States silver dollar is assuming much more importance numismatically now that economists point to the probability that this famous denomination will not be coined again. The reason for this forecast, though complex, will appear.

Mint records show that more than 855½ million silver dollars have been struck since their coinage began in 1794. At the present time there are approximately 500 million of them held by the United States Treasury; and close to 29 million "in circulation" which means they are in Federal Reserve Banks, other banks, in the hands of collectors, and actually circulating.

West of the Mississippi and south of the Ohio they are in fairly common use; and they are preferred by the transient laborers in several sections of the West.

At no time an entirely popular coin due to its size and weight, never-the-less the silver dollar attained a tremendous circulation because of a real monetary necessity during the periods of our greatest territorial settlement and development. More than once the silver dollar has been exploited politically. And, during the years of its greatest annual-average

4 THE SILVER DOLLARS OF

coinage, it proved to a surprised Secretary of the Treasury that our people can not be forced to use coins that are unwieldy and inconvenient.

It is highly interesting numismatically to trace the history of this monetary paradox if for no other reason than that its intermittent coinage and changing types give glimpses at our national development that are not completely visible in other kinds of histories.

“Dollars or units—each to be of the value of a Spanish milled dollar as the same is now current, and to contain three hundred and seventy one grains and four sixteenth parts of a grain of pure, or four hundred and sixteen grains of standard silver.” Thus did the Act of April 2, 1792, establishing our currency system, provide for the unit of silver money “for the public convenience.”

It is easy to understand why the dollar was based on the Spanish silver piece. This was always among the coins brought freely to the Colonies by buccan- eers, West Indies traders and travelers. The Colonists’ great need for a recognized medium of exchange—and a fairly dependable supply—was one reason for its general circulation; and the heavy charges for minting kept it away from the few privately-operated mints in the Colonies.

WHY A SILVER DOLLAR

There was no snap judgment or accident about the first coinage of dollars. It is doubtful that in all the World’s history there has been a group of men of

greater mental brilliancy, singleness of purpose and sheer unselfishness than the one which spent nearly a quarter-century formulating and putting into operation the plans for our national economic and political life.

The Morris Report

After due consideration for the relative merits of a silver standard, a gold standard and a bimetallic one, Robert Morris, Superintendent of Finance, reported on January 15, 1782 to the Congress of the Confederation, "Gold is more valuable than silver and so far must have the preference, but it is from that very circumstance the more exposed to fraudulent practices. Its value rendering it more portable is an advantage, but it is an advantage which paper possesses in a much greater degree and of consequence the commercial nation of England has the recourse to paper for the purpose of its trade; although the mass of circulating coin is gold. It will always be in our power to carry a paper circulation to every proper extent. There can be no doubt, therefore, that our money standard ought to be affixed to silver."

For our new coinage, he urged the decimal system because of its simplicity, shrewdly commenting, "Whenever such things (figuring prices and making change) required labor, time and reflection, the greater number who do not know are made the dupes of the lesser number who do." He found the Spanish silver dollar the coin coming nearest to a general standard throughout the Colonies. He did not favor coining the unit of silver—the dollar.

6 THE SILVER DOLLARS OF

Wrote Morris, "No coin of this size would need to be coined because it is sufficient that the value of the unit be precisely known."

About this time, Thomas Jefferson prepared some notes on "The Establishment of a Money Unit and of a Coinage for the United States." He, too, favored the Spanish milled dollar as the monetary unit and suggested dividing it into tenths and hundredths. These expressions of opinion, together with others, became the basis of a unanimous vote of approval by the Congress of the Confederation on July 6, 1785 that, "... the money unit of the United States of America be one dollar" Five years later both Jefferson and Hamilton favored a gold standard because it had "a fixed price by weight and with an eye to its fineness" which was obvious at a time when the Spanish silver dollar under consideration possessed neither a standard of weight nor of fineness.

The National Government Takes Action

As would be expected, all these opinions, reports, ordinances, etc., were made the basis for consideration of a currency by the National Government when it met in 1789. Alexander Hamilton, the Secretary of the Treasury, soon was required to "Report a proper plan or plans for the establishment of a National Mint," which he did in January 1791. Showing a remarkable understanding of the principles of monetary science, he considered, among many other questions, the varying weights of fine silver in the many issues of the Spanish dollar and found they

averaged somewhere between 368 and 374 grains. He finally concluded that, "the unit in the coins of the United States ought to correspond with 24 grains and $\frac{3}{4}$ of a grain of pure gold and with 371 grains and $\frac{1}{4}$ grain of pure silver each answering to a dollar in the money of account." His figuring also included the existing market price ratio of gold to silver (at that time 15 to 1); by multiplying the fine gold equivalent of the dollar by 15, he arrived at $371\frac{1}{4}$ grains for silver which was also about the average of the Spanish dollar. So the ratio was considered to be 15 to 1 for all coinage purposes.

The result of Hamilton's recommendations, and of Congressional discussion, was that the first coinage law—the Act of April 2, 1792—gave us units of both gold and of silver, thus committing us to bimetallism. The reasons may have appeared sufficient at that time—gold was best suited for the development of our foreign trade while silver was for domestic use.

Thus was our silver dollar launched upon its unhappy career.

DOLLAR TYPES AND DESIGNS

During the one hundred forty-seven years since our silver dollar coinage began there have been only six different major types.* What makes these so interesting to collectors is the large number of minor variations to many of the basic six designs.

Hamilton's broad and masterly plan for our coin-

*Excluding Trade Dollars, Proofs, Patterns, different Mint Marks, and Commemoratives.

age left to the Congress, perhaps wisely, many minor details. One of these was the design of the coins; and this precipitated a bitter "debate" between the Senate, which wanted an image of Washington on the obverse, and the House, which wanted a figure emblematic of liberty. The House prevailed and ordered that, "upon one side of each of said coins there shall be an impression emblematic of liberty with an inscription of the word LIBERTY and the year of the coinage; and upon the reverse of each of the gold and silver coins there shall be a figure or representation of an eagle with the inscription UNITED STATES OF AMERICA . . . "

Otherwise the designing of the coinage was left largely to the judgment of the mint officers and particularly to the artists and engravers.

1794–1804

Early records of the first mint are not detailed enough to indicate the creator of the first dollar design. Joseph Wright, Robert Scot (or Scott), Henry Voight and John S. Gardner appear on payrolls as engravers; while Moritz Furst and John Eckstein were outsiders who did work for the Mint. Any one of them could have created the design for the 1794 dollar, as most were "artists" as well. (See Plate.)

Liberty's head on this 1794 obverse is evidently a poor copy from the portrait on the medal by the eminent Dupré, struck to commemorate the Saratoga and Yorktown victories. The eagle on the reverse

lacks realism. The weakness in the design of this first dollar is undoubtedly due as much to the lack of any authentic descriptions from which to work as to the lack of that imagination which later gave strength and beauty to the designs. Striking improvements in design began when the later issues of 1795 showed the newly conceived "fillet" head of Liberty. This design is generally credited to Gilbert Stuart, foremost artist of the period. (See Plate.)

A noteworthy change came in 1798—the timely use of the splendid "heraldic" eagle with the motto "E Pluribus Unum" which in 1795 had appeared on the half-eagle gold. This is a copy, with variations, of the Great Seal of the United States—a noble and inspiring design which came into being in 1782. The "variations" caused a furor.

Up to the time of this change, the eagle was a modest looking bird with a sprig of laurel in his beak, his talons resting on a rock, or on a mass of clouds, the whole surrounded by a palm wreath; but, the change showed the fully-displayed eagle whose right talon belligerently carried a sheaf of arrows while the left held the olive branch!

In making this grave error, the confused artist or engraver probably believed he was correcting an error of the Seal itself, not realizing that the Seal is of a true heraldic design in which the right, or dexter side is the one looking from the eagle to the spectator. By reversing this positioning to the spectator's right, the engraver actually put the warlike arrows

in the eagle's important right talon, subordinating the olive branch to the minor left one.

This design of 1798 includes for the first time a galaxy of stars on the reverse. Strangely enough, the stars on the obverse had been from the beginning six-pointed; but, the new reverse showed stars with only five points. In this the design followed that of the Great Seal. The 1798 basic design continued with only date changes until coinage was stopped in 1804 by executive order; and was not resumed until 1840. Mint records show that there were 1,439,196 dollars struck during this eleven-year period. The edges of all bore the legend—ONE HUNDRED CENTS . . . ONE DOLLAR . . . OR UNIT.

Between 1794 and 1804 there were only three major types; although there were numerous variations to test the mettle of any collector. In 1881 Captain John W. Haseltine, a Philadelphia dealer of wide renown, described one hundred eleven different die varieties of the dollars of this period. Probably there were struck even more than this large number.

This amazing classification can be explained only by the fact that all dies—obverse and reverse—had to be cut by hand. Not a great deal was known about case-hardening or other phases of metallurgy and press-pressures were not carefully controlled so that dies sometimes cracked during use—but were not discarded at once—causing weird lines or “die-breaks” as the metal was forced into the veins of the cracked die. When a die could be used no longer, a

replacement was hand cut; and inevitably it would differ slightly from its predecessor.

1840–1873

President Thomas Jefferson stopped coinage of the dollar in 1804 to prevent its further export. Due to the law of “supply and demand,” the market price of silver had risen to a point where the fine silver in the dollar was actually worth more than one hundred cents—its face value. This circumstance gave brokers and money dealers an opportunity to export our dollars at a profit, an opportunity they were quick to seize. Taking our dollars out of circulation in this way defeated the very purpose of their coinage. (See Plate.)

With the new coinage in 1840, the silver dollar might be said to have entered upon its Golden Age. It showed that much progress in both design and manufacture had been made during the intervening years. A new mint had been built. Every possible mechanical improvement was included. Much step-by-step progress had been made in most United States coins. The greatest advancement was in the development of creative designing; and this was reflected in the appearance of the dollar upon the resumption of its coinage.

At this time Christian Gobrecht produced the graceful, classic figure of the seated, draped Liberty and adapted from our other coin designs the shield, Phrygian cap with pole, and the Greek chiton. The eagle on the reverse was an improvement over several

12 THE SILVER DOLLARS OF

of the former birds. The olive branch took its place in the right talon (from the spectator's viewpoint); but, the legend *E Pluribus Unum* was omitted for unexplained reasons.

The eagle on the reverse of the 1840 dollar is a portrait of PETER, the eagle which lived at the Mint for several years, flying about Philadelphia at his pleasure. He served as a model not only during his eventful life at the Mint, but after his untimely end, due to an encounter with a fly-wheel, he was stuffed and continued to serve his country from a glass case in the Mint Collection room. This 1840 reverse was a poor substitute for the reverse of several Gobrecht patterns which showed a heroic eagle in flight amid a galaxy of six-pointed stars of differing magnitudes. (See Plate.)

There are catalogers and collectors who choose to include several of these Gobrecht patterns with our regular coinage. The only justification for this would be the fact that a number of impressions of these designs were struck. Excellent though these Gobrecht patterns be, it would seem logical to treat all patterns as separate and distinct from our regular coinage.

Patterns are an interesting and important study by themselves. Most of our coins originate from patterns conceived by engravers employed at the Mint, or commissioned by our government to prepare designs. Sometimes the designs are selected as a result of an open competition among artists and sculptors. This has been the practice, in general,

even before the United States Mint was formally established. Present laws pertaining to our coinage do not permit frequent changes in the designs of our coins but require that a number of years elapse before a change may be made in any essential detail, excepting only the dates.

During the early years of the United States Mint, most of the engravers were brought from Europe for the purpose of producing our coinage or supervising the work. Their task was not an easy one as there were many denominations of coins to be designed in each of the three metals: gold, silver and copper. Our first silver dollar developed from patterns; and through the years that followed, the procedure has become well defined. New suggestions relative to devices, mottoes, or designs are worked into dies and patterns struck from these dies. The patterns may be struck in any metal, so we find patterns of dollars struck in copper, aluminum and silver. Any basic change in designs of our coins must be authorized by the Coinage Committee of Congress which makes its selections from the patterns, trial pieces, or experimental pieces submitted. This is why at times it seems that the more attractive patterns are not always those selected for the regular coinage.

The Coinage Act passed in 1837 reduced the weight of the dollar from 416 grains of standard silver to $412\frac{1}{2}$ grains and changed the fineness from 893/1000 to 900/1000, keeping the weight of fine silver the same as before (371.25 gr.). The diameters of our dollars, (the "sizes"), have always been

14 THE SILVER DOLLARS OF

expressed in one-sixteenth inches. The first issues were 24½ size; the 1798 fifteen-star variety was made 25 size; the present standard of 24 size was established with the coinage of the 1840 dollars . . . 24 size means really a diameter of one and one-half inches.

The 1840 dollar design continued with only date changes until 1873 when coinage was stopped again after some 6½ million dollars had been struck. The inscription "In God We Trust" was added in 1866 as a scroll over the eagle on the reverse after public appeal had stirred the Treasury Department to have this appear on our coins. (See Plate.)

1878-1904

The numismatist whose collection includes all types of the silver dollars probably has noticed the sharp advancements in designs and pleasing refinements in details as type followed type. In the opinion of many whose judgment should be respected, the 1878 dollar is the most handsome type of all. (See Plate.)

Known as the "Bland" or the "Morgan" dollar, this 1878 type followed the introduction of the ill-fated Trade Dollar (1873-85) to become the most prolifically coined and widely circulated of all our various dollars. Richard P. Bland ("Silver Dick"), United States Representative from Missouri—a silver producing state—sponsored the legislation under which this dollar was produced. George T. Morgan, of the Mint staff, created the design, dis-

playing great artistic ability and, in addition, a fine sense of humor.

Both are evident in his design, the humor of which is in his crowning Liberty with a symbolical group of agricultural products; in his cleverly concealing "M" on the truncation of the bust (obverse), also on the bowknot around the wreath (reverse); and by his reducing the number of feathers in the eagle's tail from eight to seven during the first year of issue. The Great Seal contained nine feathers, its adaptation to the 1798 dollar contained nineteen. Gobrecht carefully avoided this 'momentous question' by tucking the tail feathers underneath the contents of the talons. This Morgan shift in feathers caused a most surprising rise in this dollar's catalog prices. For no obvious reason the legend *E Pluribus Unum* was moved from the reverse to the obverse.

During the era of this dollar there were struck about 569 million before its interesting and important coinage came to an end in 1904—which also marked the actual economic end of the silver dollar.

1921–1928 and 1934–1935

The resumption of dollar coinage in 1921 was an obvious attempt to force upon a newly risen generation a coin that never had been anything more than a monetary mistake. By this time the dollar was more of a tradition than a necessity.

Two types appeared during 1921. The first was a revival of the well-known Morgan coinage; and the

second was designed and struck to commemorate the Peace Treaties signed after the 1914–1918 World War—the first time in the World's history that a coin was struck to celebrate a Peace. (See Plate.)

Anthony de Francisci was commissioned to prepare the final designs of this Peace dollar, and is considered to have done an outstandingly fine work. There are some who hold that there is a startled or frightened expression on the face of the figure.

Coinage of silver dollars during this ten-year period totalled about 277 million pieces; yet there are already marked shortages of certain dates. Peculiarly, many of the 1928 dollars show a bevel on the milling at the edge, making the coin seem thinner than other of our dollar coinages. In 1928 coinage stopped; only to be resumed again in 1934 and 1935 but not at all mints. Thus the dollar was coined during only eighty-two of the one hundred forty-seven years since its first issue in 1794.

TABLE

Size, Weight and Fineness of the Various United States Dollars

Date	Size*	Weight	Fine Silver	Alloy	Fineness
1794	24½	416 grains	371.25 gr.	44.75 gr.	893/1000
1798†	25	416 grains	371.25 gr.	44.75 gr.	893/1000
1840	24	412½ grains	371.25 gr.	41.25 gr.	900/1000

*Size is in sixteenths of an inch.

†The "8+7" star variety.

ECONOMIC AND POLITICAL ASPECTS OF THE DOLLAR

Generally, a free people can be depended upon to work out most of its own economic problems—if it is allowed to remain free—and the solutions to these problems become, automatically, economic laws. When a people is not free it takes much longer to make economic adjustments, and the process is more painful.

It may be considered a commonplace now-a-days to refer to the early colonists in America in connection with their practices of exchanging furs, tobacco, bullets, grains, etc., for other of their needs. This was but a step in the solution of their economic problems. This “Barter and Trade” became inadequate very soon. So failed also the make-shift use of foreign currencies brought in through trade. Coinages of the several Crown Colonies had varying values in neighboring colonies thus crippling inter-colony trade.

The War for our Independence was fought largely to secure economic freedom for the Colonies. Consequently, because of a series of acute economic needs, we were enabled to solve some of our problems by establishing a national mint and a national coinage, thus giving to a united people its first medium of exchange that would pass at par in every one of the thirteen political groups that comprised the United States.

It is true that for thousands of years other peoples had been attempting solutions of similar problems. Their contemporary currencies did not reach the Colonies in adequate quantities or on a workable basis of exchange. For eight hundred years China had been experimenting with paper money—at times quite disastrously to the state of her finances.

Many theories and experiments, principles and practices had been recorded for study by the men who were conscientiously groping for a true basis of a national monetary plan even while a unified nation was little more than a great hope. These were the recorded experiences that enabled Robert Morris to evolve his amazing plan for a national metallic currency when required to do so by the Congress of the Confederation on January 7, 1782. He produced the plan in eight days.

Had this Morris program been adopted in its entirety it might have saved our nation endless monetary woes. Morris conceived of a decimal coinage in denominations comparable with the English system (pounds, shillings and pence) as well as with the Spanish system. The coinage proposed by Morris would make it an easy matter for our people to think of both the English and the Spanish monies in terms of our coins. This ease of conversion would tend to drive out of circulation all foreign coins, leaving only our own. Morris wanted a dollar, or unit, in silver; but, was opposed to coining it, having seen how the Spanish silver dollar was cut into sections of halves, quarters and eighths to provide small

change. True enough, his smallest coin was entirely too small for practical use ($1/1440$ of a dollar); but, later on, our half-cent, two-cent, three-cent and twenty-cent pieces also proved impracticable.

However, his reasoning was far below its usual excellence when he recommended a silver standard. As a student of history and a keen observer of current movements, he should have perceived that a gold standard was the only one adequate for a commercial nation such as we were becoming. He should have seen that gold had always held a deep fascination for mankind and this, plus its ductility, natural alloying with other metals, and virtual indestructibility as a metal, were qualities that assured its use as money during all the many hundreds of years there had been commerce among human society.

Jefferson favored a gold standard; and Hamilton also leaned in that direction, although his plan to the National Government recommended coinage of both gold and silver as legal tender, thus opening the way to our domestic currency confusion that is not removed even today. In 1873 we were nominally forced to demonetize silver and become a "Gold Standard" nation. The Acts of both 1834 and 1853 are credited with leading toward this demonetization, if not actually accomplishing it.

Economic law worked to the disadvantage of our new double-standard currency almost from the first. By the end of 1800 there had been coined about one million dollars in gold eagles, half-eagles and quarter-eagles (10's, 5's and 2.50's) and about one and a half

million in silver—mostly in dollars. Very little of either coinage remained in circulation. Investigation showed that money brokers were buying our money and that it was being exported in coin or melted into bullion for the reason that both the gold and the silver coins were worth more as metals than their face values. Because of this traffic in our money, coinage of eagles was stopped in 1803 and dollars in 1804 by Secretary Madison, and later by order of President Jefferson.

This same sort of undervaluation of our coins occurred again and again; the remedy in all cases was to reduce either the gold or the silver content. This was never the final solution because no amount of legislative tinkering could make the gold coinage and the silver coinage stay in the relative values originally planned—15 to 1 at first, then finally legalized at 16 to 1; but, at times reaching 35 to 1. An economic law formulated two hundred years before proved itself time after time . . . where two metals were circulating together as legal tender, one metal would always be changing its value in relation to the other, so either creditors or debtors would always be suffering. Even Congress could not repeal a fundamental economic law.

A glance at mint coinage records during those early years would have shown anybody that gold was the preferred metal of commerce while silver halves and small coins were necessary only for minor domestic transactions and might better be subsidiary

to gold, thus leaving us only a single monetary standard—Gold.

Morris, Jefferson and Hamilton could not have foreseen the increases in the world supply of gold resulting from discoveries of the metal in North Carolina, Virginia, Georgia, Africa, Australia, California and Alaska; otherwise they might have committed us to the Gold Standard without hesitation. Neither could they have foreseen the tremendous production of silver in seven of our states, providing not only the metal but providing also fourteen Senators and many Representatives who saw to it that the National Treasury was kept well supplied with the precious metal.

In such a situation almost anything could happen—and did. Paper money began to take the place of both gold and silver in our banking and in our domestic commerce. Paper money had been tried before; but, so much of it was worthless that all of it was always under suspicion. Franklin printed some bills for use by the Colonies and remarked, “. . . it was a very profitable job and a great help to me.” Years later he argued that it (paper) was a good thing, “but I now think there are limits beyond which the quantity may be hurtful.” Poor Richard was not without a sense of humor.

Paper money had been printed for use in the Colonies during the Confederation. It was really a form of “Printing Press” money—not backed by adequate authority to tax or by other forms of reserves. It soon became “not worth a Continental”

22 THE SILVER DOLLARS OF

and its low redemption value kept down its acceptance by the people. However, in the first year of the War of the Rebellion—1861—(before the plethora of silver), the prices of gold and silver rose to such heights that coins all but disappeared from sight. As the war continued, so did the government expenses until finally the Treasury was virtually empty; a dilemma that was met by issues of paper money. Soon it was issued in denominations of less than one dollar . . . 50 cents, 25, 15, 10, 5, and even 3 cents—all known as Fractional Currency or, popularly, as “Shinplasters.”

The convenience of paper money was at once apparent to all who used it; and once the people had confidence that the paper was amply backed by reserves of gold—and that they could go to almost any bank and convert the paper into metal coins—paper became more and more widely accepted. Finally, paper largely supplanted the use of high-denomination metal in the ordinary daily domestic purchases. This is among the main reasons why the silver dollar may not be coined again.

Another strange political manipulation in silver occurred in 1918. Following the war an acute shortage of silver developed in India causing the British Government to come to us for silver. This shortage in silver advanced the price so that the silver content of our dollar was worth practically one dollar; thus providing a splendid opportunity for our Treasury to retire a vast number of silver dollars and defray the costs of their coinage—generally a loss to the Nation.

But, this was too good an opportunity for the legislators from silver states to overlook. Instead of selling their silver as bullion at a fair profit, they forced through a bill turning "not more than 350 million dollars" into bullion for India at "a price of not less than \$1.00 per fine ounce"—then included an obligation for our National Treasury to purchase a like amount of silver, at a price of \$1.00 per ounce, from American mine owners and the coining of the same number of pieces that had been sold. The price of \$1.00 was much higher than the prevailing price here for foreign silver. Public taxation again had protected (subsidized) a private industry. Silver dollars to the number of 260 million were converted into bullion under this Act, thus causing a shortage in many dates that is naturally reflected in premium prices in the numismatic market.

Some collectors, fortunately, are possessed of specimens of the Bryan "Wagonwheels" which were privately struck to demonstrate his "16 to 1" political creed. It is just as well, perhaps, that he never attained to a position where he could put into practice his pet monetary theories.

Much more could be written on the economic and political phases of silver bullion and the silver dollar particularly pertaining to legislation within the past several years; but, this does not relate numismatically to the silver dollar.

Stating it briefly: New laws affecting our currency have been passed on an average of one every eight years since the original Act of April 2, 1792 . . .

The fine carrying convenience and relative monetary stability of our paper money have probably forced the silver dollar out of coinage . . . yet, the high cost of printing one dollar silver certificates (one dollar bills) was the reason advanced by Secretary Mellon for recoining the dollar in 1921 . . . It has been principally the political functioning of organized minorities that has given numismatists a coin of almost unlimited possibilities as an item for collecting—economic law would have forced it out of coinage perhaps as early as 1804.

It has been said quite fittingly, "History teaches that we do not profit from the teachings of History."

THE FABULOUS 1804 DOLLAR*

It is doubtful whether any other coins—even some much rarer ones—have been surrounded by more romance, or more general interest, than that which attaches to the “original” 1804 dollars. The mystery of the disappearance of practically the entire coinage only adds to the fascination—and to the extremely high valuations—of this coin. There have been paid prices of one thousand, two thousand, three thousand six hundred and even four thousand, two hundred and fifty dollars for one of these rarities. Offers of five thousand dollars for a specimen have been refused.

Mint records show that 19,570 silver dollars were coined in 1804. The entire number was produced between January 7, and March 28, 1804—nor is there any authenticated evidence up to this time to dispute this figure. Seven of them were reserved for assay. Today there are only six of the coinage known to be in existence; plus at least seven additional ones dated 1804 with a different reverse and edge, giving weight to the belief that these were struck at a later date, probably 1858. The dies were not finally destroyed until the winter of 1868–69. (See Plate.)

*Note: The writer purposely omits the condition of these dollars, believing that to be a negligible factor in view of the importance of the group as a whole.

26 THE SILVER DOLLARS OF

There are many opinions and conjectures about the balance of the coinage, of which the following are frequently mentioned:

They were immediately exported as bullion or as coin—maybe through connivance of an employee of the government . . .

All were lost at sea on a China-bound vessel . . .

All were melted at the mint . . .

All were exported to the Far East . . .

All were paid as tribute to the Barbary pirates . . .

All were captured by the British . . .

They were stolen and now lie buried . . .

None was coined in 1804.

Those known to be in existence are gems prized almost above price by their owners. Attempts have been made to make casts of the coin. The writer has seen several altered dates of the 1801 dollar in which the second figure 1 of the date was converted by some means into a figure 4; but, a strong magnifying glass generally reveals the fraud even if there be no other distinctive characteristics whereby a genuine 1804 can be distinguished.

Captain John W. Haseltine, the Philadelphia dealer, who in 1881 published his *Type Table* minutely describing many varieties of early U. S. silver pieces, thus described an 1804 dollar: "No. 1; the upper left star is distant from the L in 'Liberty,' the upper right star has two points almost touching the Y (this is one of the best indications of a genuine 1804 dollar, as it occurs in but very few of the dollars of other dates); the lower left star points to the

center of the curl protruding farther to the rear; the mouth of Liberty open; the 1 in the date is very close, almost touching, the curl; the 4 is also very near the bust; the horizontal part of the 4 has no crossbar to it; rev., the eagle's beak closes exactly on the point of the star; the leaf in olive branch points to the part of the lower stand of the I nearest to R in AMERICA; 13 arrows in eagle's claw; the star in eagle's beak also touches scroll between the letters B and U in 'PLURIBUS.' "

Although Captain Haseltine does not mention it, the edges were lettered "ONE HUNDRED CENTS, ONE DOLLAR, OR UNIT" as were all our dollars from 1794 to 1804. Perhaps Haseltine wrote his description from memory, or from notes, rather than from an actual 1804 dollar for he omitted probably the most distinguishing feature of the originals—the legends on the reverse. The spacing of the letters "STATES OF" above the ring of clouds in the originals is such as to center the "O" and "F" over adjacent clouds; but, in most of the restrikes the "O" is directly over a notch between two clouds, and the "F" is noticeably closer to the wing tip; although there are specimens of these restrikes with the "original" reverse. (See Plate.)

When the restrikes were made, the original obverse was used but seems to have been recut so that the stars and other details are sharper. The original "edge dies" or "collars" were not preserved complete, consequently the edges of these restrikes are either plain or contain repeated parts of the edge

dies in order to fill the edge. Three of these restrikes were with difficulty recovered by the mint; two were destroyed and the third was placed in the mint collection where there was already one of the originals. Other "restrikes" have remained in the hands of collectors.

One of the very interesting phases of these 1804 dollars is their pedigrees—their individual histories that not only help establish authenticity, but constitute as well "abstracts of title" tracing the coin from its original owner much as a piece of land is "abstracted."

Of this practice, the so-called "Dexter Dollar" is an excellent example: It was discovered in the collection of Adolph Weyl, a Berlin (Germany) dealer, by the Chapman Brothers (Philadelphia dealers) who bought it from him in October 1884 and offered it in their auction sale May 14, and 15, 1885. Here it was bought by Mr. J. W. Scott (another dealer) for Mr. J. V. Dexter of Denver, Colorado, at a price of one thousand dollars, and it remained in his possession until 1902. Hudson and Henry Chapman started the pedigree of this dollar because there is now no evidence that Weyl possessed any history of its ownership from 1804 to 1884. The Chapmans submitted their Berlin purchase to the U. S. Mint authorities in Philadelphia who, after comparing it with the known original in the "Mint Cabinet of Coins," pronounced it genuine in their judgment. This judgment was certified to in 1887 in affidavits made by A. Loudon Snowden, Superintendent of the

Mint; by Jacob B. Eckfeldt, Assayer, and R. A. McClure, Curator of the Cabinet Collection; and by Patterson DuBois, one time assistant assayer.

In settling Mr. Dexter's estate, the Trust Company disposed of this coin in 1903 to Mr. H. G. Brown of Portland, Oregon, who was supplied with the affidavits plus a letter from Mr. R. G. Parvin, secretary of the Trust Company, certifying that the dollar was the one owned by Mr. Dexter. The price paid was eighteen hundred dollars. In 1904 Mr. Brown disposed of his collection and the dollar was bought for the account of Mr. Wm. F. Dunham of Chicago, at a price reported to be eleven hundred dollars. Mr. Dunham received, and preserved, all the pedigree documents. The Dunham collection was auctioned by B. Max Mehl on June 3, 1941; and the "Dexter" Dollar was sold for a reported price of four thousand two hundred fifty dollars. (See Plate.)

The "Dexter" was placed No. 4 on the list of 1804 dollars compiled by the Chapman Brothers when they cataloged their sale in 1885. It would contribute considerable of value to numismatic history if equally complete biographies could be prepared on the other five originals. In the hope that this may be achieved at some future time, the following histories, incomplete as the writer knows them to be, are offered as a basis.

The Mint Cabinet Specimen, No. 1

On January 1, 1912 there was submitted to the Director of the Mint, Washington, D. C., a "Catalogue of the Coins, Tokens and Medals in the

30 THE SILVER DOLLARS OF

Numismatic Collection of the Mint of the United States at Philadelphia." In this authoritative work T. L. Comparette, the Curator, describes this 1804 original coin as similar to the 1798 dollar "but with a beading around the borders" and, "The edge . . . is very faintly struck, the legend being only legible, while the condition of the specimen is otherwise 'uncirculated.'" This beading is merely a variant of that common to all dollars, starting with the 1794 type.

Just where this Mint Collection dollar came from is not clear. It may have come from the seven put aside for assay; or, it may have been bought back from the regular coinage. The Mint Collection is the growth from a nucleus gathered by Adam Eckfeldt whose name appears on Mint payrolls of 1795 as "Die Forger and Turner." It was his grandson who made affidavit about the "Dexter" in 1887 at the same time Mr. Snowden certified that the Mint specimen had been in the Collection for more than forty years and had always been considered an original. Adam Eckfeldt's son, Jacob R., wrote a complete and scholarly book on processes and procedures at the U. S. Mints, published in 1842 (see Bibliography), in which he cataloged the Mint Collection and illustrated an 1804 dollar; yet he did not specifically mention it in the text! Why did he not refer to it as of great rarity? Was there then only the specimen he illustrated? Did he know there was a quantity of them in the Mint vaults? These are questions which, after one hundred years, still intrigue us.

The "Mickley" Dollar, No. 2

This "1804 original" first appeared in 1867 when Mr. Joseph J. Mickley sold it to Mr. W. A. Lilliendahl for seven hundred fifty dollars. Mr. Mickley stated that he secured the coin many years before from the Bank of Pennsylvania, Philadelphia. It does not seem to have a "name;" so for convenience the writer attaches the name of its first recorded owner. Mr. Lilliendahl disposed of it to Edward Cogan who sold it in 1868 to Mr. W. S. Appleton, a New England collector. Since 1905 the dollar has been in the Appleton Collection in the Massachusetts Historical Society, Boston, Mass. The meager records of this dollar indicate few prices during the transfers of ownership.

The "Parmelee" Dollar, No. 3

This might be designated also as the "Aged Lady" dollar, because a person thus described secured it at the Philadelphia Mint many years before she disposed of it in 1868 for an unnamed sum to E. H. Sanford. It changed hands again in 1874 when L. G. Parmelee paid seven hundred dollars to secure it from the Sanford collection. Mr. Byron Reed bought it in 1892 from Parmelee for five hundred seventy dollars; and now it is in the "Byron Reed" Collection at the City Museum, Omaha, Nebraska.

The "Dexter" Dollar, No. 4

Heretofore described, pp. 28 ff.

The "Manning" Dollar, No. 5

This has had a most active career since first it

came to public notice in 1875 in possession of Colonel M. I. Cohen. No less than eight people have possessed it for longer or shorter periods. Another of the mysteries of the 1804 dollars is that they remained in obscurity for as long as three-quarters of a century before making an appearance—and then generally only to be offered for sale.

Where Col. Cohen got his specimen is not evident in the records. According to his own statement, he had located it in possession of a resident of Richmond, Virginia, and finally purchased it. He sold it in 1875 to H. S. Adams for a reported price of five hundred dollars. In 1876, the Adams Collection passed into the hands of L. G. Parmelee who sold this dollar to W. B. Wetmore in 1878 for six hundred dollars. Some years later, in 1906, it became the property of James H. Manning; then was owned by Elmer S. Sears from whose collection it was obtained by B. Max Mehl, who sold it in 1921 to Mr. Lammot du Pont who, it is believed, still has it in his collection.

The "Stickney" Dollar, No. 6

This dollar is unique in several particulars. Where it came from and how it was first secured by a private individual are both matters of definite record. It has changed hands fewer times than any other original. It remained in possession of one collector longer than any of the others; and it brought a price that stood as a record high for a dollar until 1941. (See Plate.)

Matthew A. Stickney was among the first of those

whom we may justifiably term "great collectors." His keen appreciation for real and potential rarities is evident in the catalog of his collection.

Mr. Stickney secured the dollar which bears his name at the U. S. Mint in Philadelphia on May 9, 1843, giving in exchange for this Mint duplicate several coins including the unique and priceless 1785 gold "Immune Columbia"—struck over the George III guinea of 1775. Because it came from the Mint Collection in 1843, this dollar should stand as No. 2 on the Chapman list, which list, however, is not "official" in any sense of the word and evidently was made by them for their own use.

The dollar remained in the Stickney Collection for nearly 65 years until in 1907 it was sold by S. Hudson and Henry Chapman to Colonel J. W. Ellsworth for the reported price of three thousand six hundred dollars. The next change of ownership occurred in 1923 when the coin became part of the Wm. C. Atwater Collection. It seems more than a coincidence that Mr. Atwater secured this famous coin. He was truly a collector at heart and as a young man had formed a collection of American minor coins. As he grew older he gradually added choice pieces of all denominations, climaxing his long career as a collector and student of numismatics when he bought the "Stickney" Dollar. Later, Mr. Atwater gave his entire collection to his three sons.

One cannot but be amazed that such a small handful of silver dollars could represent so much value . . . sentimental at least in part . . . and rouse so much

possessive instinct; it is all the more astounding when one recalls that the silver content was never worth more than one dollar and ten cents and is worth now only about twenty-three cents. One splendid example of the law of supply and demand.

In 1804 the equipment at the U. S. Mint was inadequate for the tasks imposed upon it. The technique of coining was not yet fully developed; in consequence, many of the early dollars are not struck evenly. This is particularly true of the 1804 dollars for none is a fully struck piece, there being also considerable variation in weight from the legal standard of 416 grains. The Mint Collection specimen weighs 415.9 grains; the Dexter, 415.307 grains; the Manning, 410.75 grains; the Stickney, 415.307 grains; and others as low as 411 grains. One of the restrikes weighs only 381.5 grains.

It is almost one hundred years since Matthew A. Stickney secured from the U. S. Mint the 1804 dollar which ever since has borne his name. Time has but made keener the interest in these notable coins. Collectors and dealers have travelled thousands of miles—have crossed oceans and continents—in efforts to secure these pieces.

In passing the 1804 dollars from owners to owners, probably more money has changed hands than over any similar number of coins in the World's history. Yet, there are today collectors who hope the rest of that 19,570 coinage will turn up so that each collector of U. S. silver dollars may have an original 1804 in his cabinet.

BIBLIOGRAPHY

ADAMS, EDGAR H. and WOODIN, WM. H. *U. S. Pattern, Trial and Experimental Pieces.* New York, 1913.

American Journal of Numismatics, 1907.

CAROTHERS, NEIL. *Fractional Money.* New York, 1930.

COFFIN, JOSEPH. *Our American Money.* New York, 1940.

ECKFELDT, JACOB R. and DuBois, W. E. *A Manual of Gold and Silver Coins of All Nations.* Philadelphia, 1842. Second and Third Editions, New York, 1850, 1852.

EVANS, GEORGE G. *Illustrated History of the United States Mint.* Philadelphia, 1885.

HASELTINE, JOHN W. *Catalogue of John W. Haseltine's Type Table of U. S. Dollars, Half Dollars and Quarter Dollars.* Philadelphia, 1881. (Reprinted by B. Max Mehl, Fort Worth, 1927.)

HEPBURN, A. BARTON. *A History of Currency in United States.* New York, 1915.

HICKCOX, JOHN H. *An Historical Account of American Coinage.* Albany, 1858.

KEMMERER, EDWIN W. *Kemmerer on Money.* Philadelphia, 1934.

——— *Money.* New York, 1935.

SECRETARY OF THE TREASURY. *Annual Report on the State of the Finances.* Washington, June, 1940.

STEWART, FRANK H. *History of the First U. S. Mint.* Philadelphia, 1924.

SUMNER, W. G. *History of American Coinage.* New York, 1875.

U. S. MINT *Catalogue of Coins, Tokens and Medals in the Numismatic Collection of the Mint of the United States at Philadelphia.* Washington, 1912, 1913, 1914.

WATSON, DAVID K. *History of American Coinage.* New York, 1899.

WOODIN, WM. H. and ADAMS, EDGAR H. See Adams, Edgar H.

THE ILLUSTRATIONS

1. First Silver Dollar Designed—Struck in 1794.
2. The 1795 Fillet Head—The second major design.
3. The Heraldic Eagle Reverse of 1798—The third major design.
4. The 1840 Dollar—Designed by Christian Gobrecht.
5. Great Seal of The United States—Designed in 1782.
6. The 1866 Dollar—First to bear the legend “IN GOD WE TRUST.”
7. The “Bland” Dollar of 1878—Designed by George T. Morgan.
8. The “Peace” Dollar of 1921—Designed by Anthony de Francisci.
9. The splendid 1836 Pattern Dollar—Designed by Gobrecht.
10. The “Stickney” 1804 Dollar.
Photograph by courtesy of Wayte Raymond
11. The “Dexter” 1804 Dollar.
Photograph by courtesy of B. Max Mehl
12. The “Rosenthal” 1804 Restrike.
Photograph by courtesy of The Chase National Bank

SILVER DOLLARS OF THE UNITED STATES OF AMERICA



1



2





3



4



5



6



3



4



5



6



7



8





9



10



7



8



9



10



9



10



11



12



UNIVERSITY OF MICHIGAN



NUMISMATIC NOTES AND MONOGRAPHS

(Continued)

32. Sydney P. Noe. The Coinage of Metapontum. (Part I) 1927. 134 pp. 23 pls. \$3.00.
33. Edward T. Newell. Two Recent Egyptian Hoards—Delta and Keneh. 1927. 34 pp. 3 pls. \$1.00.
34. Edward Rogers. The Second and Third Seleucid Coinage of Tyre. 1927. 33 pp. 4 pls. \$1.50.
35. Alfred R. Bellinger. The Anonymous Byzantine Bronze Coinage. 1928. 27 pp. 4 pls. \$1.50.
36. Harrold E. Gillingham. Notes on the Decorations and Medals of the French Colonies and Protectorates. 1928. 62 pp. 31 pls. \$2.00.
37. Oscar Ravel. The "Colts" of Ambracia. 1928. 180 pp. 19 pls. \$3.00.
38. Howland Wood. The Coinage of the Mexican Revolutionists. 1928. 53 pp. 15 pls. \$2.50.
39. Edward T. Newell. Alexander Hoards—IV. Olympia. 1929. 31 pp. 9 pls. \$1.50.
40. Allen B. West. Fifth and Fourth Century Gold Coins from the Thracian Coast. 1929. 183 pp. 16 pls. \$3.00.
41. Gilbert S. Perez. The Leper Colony Currency of Culion. 1929. 10 pp. 3 pls. 50c.
42. Alfred R. Bellinger. Two Hoards of Attic Bronze Coins. 1930. 14 pp. 4 pls. 50c.
43. D. H. Cox. The Caparelli Hoard. 1930. 14 pp. 2 pls. 50c.
44. Geo. F. Hill. On the Coins of Narbonensis with Iberian Inscriptions. 1930. 39 pp. 6 pls. \$1.00.
45. Bauman L. Belden. A Mint in New York. 1930. 40 pp. 4 pls. 50c.
46. Edward T. Newell. The Küchük Köhne Hoard. 1931. 33 pp. 4 pls. \$1.00.
47. Sydney P. Noe. The Coinage of Metapontum. Part II. 1931. 134 pp. 43 pls. \$3.00.
48. D. W. Valentine. The United States Half Dimes. 1931. 79 pp. 47 pls. \$5.00.
49. Alfred R. Bellinger. Two Roman Hoards from Dura-Europos. 1931. 66 pp. 17 pls. \$1.50.
50. Geo. F. Hill. Notes on the Ancient Coinage of Hispania Citerior. 1931. 196 pp. 36 double pls. \$4.00.
51. Alan W. Hazelton. The Russian Imperial Orders. 1932. 102 pp. 20 pls. \$3.00.
52. O. Ravel. Corinthian Hoards (Corinth and Arta). 1932. 27 pp. 4 pls. \$1.00.
53. Jean B. Cammann. The Symbols on Staters of Corinthian Type (A Catalogue). 1932. 130 pp. 14 double pls. \$3.00.
54. Shirley H. Weber. An Egyptian Hoard of the Second Century A. D. 41 pp. 5 pls. 1932. \$1.50.
55. Alfred R. Bellinger. The Third and Fourth Dura Hoards. 1932. 85 pp. 20 pls. \$1.50.
56. Harrold E. Gillingham. South American Decorations and War Medals. 1932. 178 pp. 35 pls. \$3.00.
57. Wm. Campbell. Greek and Roman Plated Coins. 1933. 226 pp. 190+ pls. \$3.50.
58. E. T. Newell. The Fifth Dura Hoard. 1933. 14 pp. 2 pls. \$1.00.
59. D. H. Cox. The Tripolis Hoard. 1933. 61 pp. 8 pls. 2 maps. \$1.50.
60. E. T. Newell. Two Hoards from Minturno. 1933. 38 pp. 5 pls. \$1.00.
61. Howland Wood. The Gampola Larin Hoard. 1934. 84 pp. 10 double pls. \$3.00.
62. J. G. Milne. The Melos Hoard of 1907. 1934. 19 pp. 1 pl. \$1.00.

NUMISMATIC NOTES AND MONOGRAPHS

(Continued)

63. A. F. Pradeau. The Mexican Mints of Alamos and Hermosillo. 1934. 73 pp. illus. \$1.50.
64. E. T. Newell. A Hoard from Siphnos. 1934. 17 pp. illus. 50c.
65. C. H. V. Sutherland. Romano-British Imitations of Bronze Coins of Claudius I. 1935. 35 pp. 8 double pls. \$2.00.
66. Harrold E. Gillingham. Ephemeral Decorations. 1935. 40 pp. 11 pls. \$2.00.
67. Sawyer McA. Mosser. A Bibliography of Byzantine Coin Hoards. 1935. 116 pp. \$1.50.
68. Edward T. Newell. Five Greek Bronze Coin Hoards. 1935. 67 pp. 9 double pls. \$2.00.
69. Alfred R. Bellinger. The Sixth, Seventh and Tenth Dura Hoards. 1935. 75 pp. 5 pls. \$1.00.
70. Frederick O. Waage. Greek Bronze Coins from a Well at Megara. 1935. 42 pp. 3 pls. \$1.00.
71. Sydney P. Noe. The Thurian Di-Staters. 1935. 68 pp. 11 double pls. \$2.00.
72. John Walker. The Coinage of the Second Saffarid Dynasty in Sistan. 1936. 46 pp. 4 double pls. \$1.00.
73. Edward T. Newell. The Seleucid Coinage of Tyre. 1936. 34 pp. 5 pls. \$1.00.
74. Margaret Crosby and Emily Grace. An Achaean League Hoard. 1936. 44 pp. 4 pls. \$1.50.
75. Agnes Baldwin Brett. Victory Issues of Syracuse after 413 B. C. 1936. 6 pp. 2 pls. 50c.
76. Edward T. Newell. The Pergamene Mint under Philetærus. 34 pp. 10 pls. \$2.50.
77. Charles C. Torrey. Aramaic Graffiti on Coins of Demanhur. 13 pp. 2 pls. \$1.00.
78. Sydney P. Noe. A Bibliography of Greek Coin Hoards. (Second Edition). 1937. 362 pp. \$4.00.
79. Naphtali Lewis. A Hoard of Folles from Seltz (Alsace). 1937. 81 pp. 5 pls. \$2.00.
80. Harold Mattingly and W. P. D. Stebbing. The Richborough Hoard of 'Radiates,' 1931. 1938. 118 pp. 15 pls. \$2.50.
81. Alfred R. Bellinger. Coins from Jerash, 1928-1934. 1938. 141 pp. 9 pls. \$2.50.
82. Edward T. Newell. Miscellanea Numismatica: Cyrene to India. 1938. 101 pp. 6 pls. \$2.00.
83. David M. Bullowa. The Commemorative Coinage of the United States, 1892-1938. 1938. 192 pp. 10 pls. \$2.50.
84. Edward T. Newell. Late Seleucid Mints in Ake-Ptolemais and Damascus. 1939. 107 pp. 17 pls. \$2.00.
85. Alfred R. Bellinger. The Eighth and Ninth Dura Hoards. 1939. 92 pp. 13 pls. \$2.00.
86. Harrold E. Gillingham. Counterfeiting in Colonial Pennsylvania. 1939. 52 pp. 2 pls. \$1.00.
87. George C. Miles. A Byzantine Weight Validated by al-Walid. 1939. 11 pp. 1 pl. 50c.
88. Jaime Gonzalez. A Puerto Rican Counterstamp. 1940. 21 pp. 2 pls. \$1.00.
89. Harrold E. Gillingham. Mexican Decorations of Honour. 1940. 53 pp. 17 pls. \$2.00.
90. Donald F. Brown. Temples of Rome as Coin Types. 1940. 51 pp. 9 pls. \$1.50.
91. Eunice Work. The Earlier Staters of Heraclea Lucaniae. 1940. 40 pp. 8 pls. \$2.00.
92. D. H. Cox. A Tarsus Coin Collection in the Adana Museum. 1941. 67 pp. 12 pls. \$2.00.
93. Herbert E. Ives. Foreign Imitations of the English Noble. 1941. 36 pp. 5 pls. \$1.50.
94. Louis C. West. Gold and Silver Coin Standards in the Roman Empire. 1941. 199 pp. \$1.50.

THE UNIVERSITY OF MICHIGAN

DATE DUE

1878
1878

SEP 08 1996

AUG 8 1997
NOV 2 1997

